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Database
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A Geneseq_16Dec04:*
1: geneseqp1980s:*
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                                                                                                                                                                                                                                                                                                                                                         2105692 seqs, 386760381 residues
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277
                                                                                                                                                                                    Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                    HFKPCRDKDLAYCLNDGECF.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4, 2005, 11:39:31; Search time 162 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (without alignments)
112.208 Million cell updates/sec
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

No. Score Match Length DB ID	100.0 47	.0 48 5	100.0 52 6	100.0 157	277 100.0 157 8	100.0 360 2	277 100.0 362 2	100.0	100.0	277 100.0	100.0	277 100.0 713 5	100.0	277 100.0	277 100.0 720 5	277 100.0	116.5 42.1 52 2	116 1 1 1 1 1 1 1	TTO:0 40.1	116.5 42.1 52 3	116.5 42.1 52 3 113.5 41.0 52 2	116.5 42.1 52 3 113.5 41.0 52 2 113.5 41.0 53 6	116.5 42.1 52 3 116.5 42.1 52 3 113.5 41.0 52 2 113.5 41.0 53 6 113.5 41.0 53 6	116.5 42.1 52.3 113.5 41.0 52.2 113.5 41.0 53.8 6 113.5 41.0 53.8 6 113.5 41.0 63.2	.5 41.0 52 2 .5.5 41.0 63 2 .5.5 41.0 63 2 2 .5.5 41.0 63 2 .5.5 41.0
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ID	AAW97622	AAG66046	AAE36807	AAY05451	ADN48870	AAW97621	AAW97620	ABB08776	AAW97619	ABG32080	AAW97617	ABG32061	AAW97618	AAY05452	ABG32065	ADN48890	AAW05182	AAY69983	AAB12602	AAW05184	AAE36803	ADN48885	AAR55659	AAR46918	, , , , , ,
Description	Aaw97622	Aag66046	Aae36807	Aay05451	Adn48870	Aaw97621	Aaw97620	Abb08776	Aaw97619	Abg32080	Aaw97617	Abg32061	Aaw97618	Aay05452	Abg32065	Adn48890	Aaw05182	Aay69983	Aab12602	Aaw05184	Aae36803	Adn48885	Aar55659	Aar46918	
ion	Human	Mouse	Human	Human	Human	Human	Mouse	Human	Human	Novel	Mouse	Mouse	Human	Human	Human			NDF/hereg	Human NDF	Neu diffe	Human	Human	EGFL2	EGFL2	
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This is the epidermal growth factor (EGF)-like domain of human neuregulin related ligand NRG3 (see also AAW97618), a novel member of the EGF-like family of protein ligands that binds to the ErbB4 receptor and activates ErbB4 receptor tyrosine phosphorylation. The EGF-like domain of NRG3 is distinct from the EGF-like domains of NRG1 and NRH2. The invention provides human and murine polypeptides (see also AAW97617) that have at least 75% homology to the NRG3 EGF-like domain, as well as expression vectors, host cells and methods for the recombinant production of novel NRG3s. The NRG3 polypeptides and polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having

New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome.

WPI; 1999-120882/10.

Claim 30; Page 64; 101pp; English.

45	44	43	42	41	40	39	38	37	36	<b>ω</b>	34	ω ω	32	31	30	29	28	27	0
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Aag67933	Adh77520	Abj00081	Abj00043	Aar87464	Aaw09366	Aar96079	Aar67253	Aar46921	Aar55662	Aar87465	Aaw09367	Aar96080	Aar67254	Aar46922	Aar55663	Aab36702	Aar87461	Aaw09363	Adry60/6
_	) Human nev	l Human nev	Human neu	1 Epidermal		) Epidermal	3 Human epi	L EGFL5. 3,		5 Epidermal	-	) Epide	1 Human epi		B EGFL6. 3/	EGF-like	[ Epiderma]	3 EGFL2. 8,	spiderma.

# ALIGNMENTS

#### RESULT 1 AAM97622 ID AAW9 XX AAW9 AC AAW9 AC AAW9 AC AAW9 AC AAW9 AX Huma XX Neux KW Sign KW Ineux COS HOMO ONE COS TOLE Godowski PJ, 30-JUN-1998; 09-JUL-1997; 24-JUL-1997; Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration; Human neuregulin related ligand NRG3 EGF-like domain. 10-MAY-1999 (first entry) AAW97622 standard; protein; 47 21-JAN-1999. WO9902681-A1 Homo sapiens. neuropathy; therapy; diagnosis; epidermal growth factor; EGF; immunoadhesin. AAW97622; (GETH ) GENENTECH INC. Mark MR, 97US-0052019P. 97US-00899437. 98WO-US013411. Zhang D; A

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RESULT 2
AAG66046
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                                                                Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide sequences encoding NRG-4, useful for upregulating or downregulating ErbB-4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.
Disclosure; Fig 1c; 153pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnerary; cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant; cytostatic; nootropic; EGF; NRG-3.
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Pred. No. 7.5e-21;
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The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG

Selecting or designing compounds that interact with or inhibit formation

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 47
                                                                                                                                                                                                                 03-AUG-2001; 2001AU-00006827.

03-AUG-2001; 2001AU-00006828.

01-NOV-2001; 2001US-0335393P.

01-NOV-2001; 2001US-0336560P.

31-MAY-2002; 2002AU-00002731.

11-JUN-2002; 2002US-0388171P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma; cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human; receptor; EGF; neuregulin 3.
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recombinant methodology. Pharmaceutical compositions comprising NRG-4;
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                                   WPI; 2003-268181/26
                                                                                                                                                               (CSIR )
(BIOM-)
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Lovrecz GO,
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LUDWIG INST CANCER RES.
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tive 0; Mismatches 0;
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WALTER & ELIZA.
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RESULT 4
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This sequence is the human heregulin-like factor (HLF) of the invention. The HLF is involved in the regulation of cell growth. Detection of different levels of expression of the HLF gene can be used for the diagnosis of disorders, e.g. in the neural system. In particular, detection of different levels of HLF gene expression in cells or body fluid of an individual can be used for diagnosing cancer. The products can also be used in the treatment of disorders involving abnormal levels
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                                                                                                                                                                                                                                                                                                        diagnosis and treatment of disorders particularly cancers.
                                                                                                                                                                                                                                                                                                                          New isolated heregulin-like factor - used to develop products for the diagnosis and treatment of disorders involving regulation of cell growth,
                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1999-095327/08.
N-PSDB; AAX36423.
                                                                                                                                                                                                                                         Claim 17; Page 86-87; 118pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human heregulin-like factor sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-JUL-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HUMA-) HUMAN GENOME SCI INC (GEOU ) UNIV GEORGETOWN.
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Pred. No. 8.2e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hijazi MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
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   ing cancer. The products involving abnormal levels
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RESULT 6
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AAW97621

standard; protein; 360

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RESULT 5
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Matches
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Best Local Similarity
Matches 47; Conserv
                                                                                                                                             Query Match
                                                                                                                                                                                                                                           The present invention relates to novel heregulin-like factor (HLF) polypeptides and the encoding polynucleotides. The invention is useful for preparing a composition for diagnosing and treating cancer. The invention is also useful in gene therapy. The present sequence is human heregulin-like factor (HLF) protein.
                                                                                                                                                                                             Sequence 157 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        New heregulin-like factor preparing a composition for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 157 AA
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                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ ID NO 2; 48pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; ADN48869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2004-338520/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Young PE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-JUN-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HLF; heregulin-like factor; diagnosis; cancer;
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(GEOU ) UNIV GEORGETOWN MEDICAL
                                                                                                                        Local
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                                                                                             l Similarity 47; Conserv
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HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL
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                                                                                          100.0%; ilarity 100.0%; Conservative 0
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or diagnosing or tre
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                                                                                          Score 277; DB 8;
Pred. No. 2.3e-20;
; Mismatches 0;
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Pred. No. 2.3e-20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        id or polypeptide, useful for treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene therapy; human.
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                                                                                                                                          Length 157;
                                                                                                Indels
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09-JUL-1997;
24-JUL-1997;
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                                                                WPI; 1999-120882/10
                                                                    Godowski PJ,
                                                                               30-JUN-1998;
                                                                                     WO9902681-A1
                                                                       (GETH ) GENENTECH INC
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Exhb4 receptor, but not to the Exhb2 or Exhb3 receptor, activates Exhb4
CC murine polypeptides (see also AAM97617) that have at least 75% homology
CC to the NRG3 ECD, as well as expression vectors, host cells and methods
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the Exhb4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC cells (e.g. multiple sclerosis). They can be used to treat diseases which involve
CC cells (e.g. multiple sclerosis). They can be used to treat diseases which involve
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC malignancy, or toxic agents. NRG3 can also be used to treat patients whose
CC disorders such as amyotrophic lateral sclerosis (fou Gehrig's disease),
CC malignancy, conditions involving spinal muscular atrophy or paralysis,
CC disease, epilepsy, multiple sclerosis, Huntington's disease, Parkinson's
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC streat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC streat syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or disease caused by skeletal or smooth
CC such as muscular of transgenic or knockout animals or for drug
CC screening
CC screening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       related ligand NRG3 (see also AAW97618), a novel member of the epidermal growth factor (EGF)-like family of protein ligands. NRG3 binds to the ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   signal transduction; nervous system disorder; neurodegeneration; neuropathy; therapy; diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human neuregulin related ligand NRG3 extracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 5(a); Page 69-70; 101pp; English
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97US-00899437.
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Neuregulin related ligand; NRG3; mouse; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration; neuropathy; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                    Mouse neuregulin related ligand NRG3 extracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW97620 standard; protein; 362
09-JUL-1997;
24-JUL-1997;
                                                              30-JUN-1998;
                                                                                                      21-JAN-1999
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97US-0052019P.
97US-00899437.
                                                                98WO-US013411.
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malignancy, Alzheimer's New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, disorders, e.g. stroke, iso disease or Down's syndrome.

Godowski PJ,

Mark MR,

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(GETH ) GENENTECH INC

WPI; 1999-120882/10

Claim 5(a); Page 62-63; 101pp; English.

CC This is the extracellular domain (ECD, aal-362) of murine neuregulin CC related ligand NRG3 (see also AAW97617), a novel member of the epidermal CC growth factor (EGP)-11ke family of protein ligands. NRG3 binds to the CC ExbB4 receptor, but not to the ExbB2 or ExbB3 receptor, activates ExbB4 (creeptor tyrosine phosphorylation. The invention provides human and CC entraine polypeptides (see also AAW97618) that have at least 75% homology CC murine polypeptides (see also AAW97618) that have at least 75% homology CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and CC polynucleotides and can be used to enhance the survival, proliferation or CC differentiation of cells having the ExbB4 receptor in vivo and in vitro. CC They can be used to prevent or treat damage to a nerve or damage to other CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney CC cells. In particular, they can be used to treat disease which involve CC neural (e.g. multiple sclerosis). They can be used to treat patients whose CC ischaemia, infection, metabolic disease, nutritional deficiency, CC disease, epilepsy, multiple sclerosis. NRG3 can also be used to treat motor neuron CC disease, epilepsy, multiple sclerosis, Huntington's chesase, parkinson's CC syndrome, hereditary neuropathies including Charcot Marie-Tooth disease, CRabbe's CC such as muscular yneuropathies including Charcot Marie-Tooth disease, CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-CC such as such condition of transgenic or knockout animals or for drug creation.

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Query Match Best Local ( Matches

al Similarity 100. 47; Conservative

100.0%;

Score 277; DB 2; Pred. No. 4.8e-20; ; Mismatches 0;

Length 360;

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1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47

Sequence 360

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ABBO8776

ID ABBO
XX ABBC
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XX Huma
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RESULT 9
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                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to human neuregulin 55, polynucleotide for coding this polypeptide and a method for producing this polypeptide by using DNA recombination technique. The invention also discloses the method for curing several diseases, such as nervous system developmental diseases, neuropsychopathy, other nervous system diseases, development disturbance, neuropsychopathy, other nervous system diseases, development disturbance, tumours, inflammations and immunological disease by using said polypeptide. The invention also discloses an antagonist for resisting said polypeptide and its therapeutic action and also discloses the application of polynucleotide to coding this novel human neuregulin 55.
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 27-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; neuregulin 55;
tumour; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New polypeptide human neuregulin 55 and polynucleotides for encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                мао Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-MAY-2000; 2000CN-00115761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-MAY-2000; 2000CN-00115761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-DEC-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human neuregulin 55 SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-MAY-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is that of human neuregulin 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
les 47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2002-217507/28
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                                                                                                                                                                                                              1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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                                                                                                                                                                                                                                                                                                                             Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BODE GENE DEV CO LTD SHANGHAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362
                                                                                                                                                                               HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 138
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ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                        100.0%; llarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                    A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Disclosure); 35pp; Chinese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nervous system; development; neuropsychopathy; immunological disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                        Score 277; DB 5;
Pred. No. 6.6e-20;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 277; DB 2;
Pred. No. 4.9e-20;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                   Length 502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 362;
                                                                                                                                                                                                                                                                                              Indels
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AAW97619 standard; protein; 696

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This is the amino acid sequence of splice variant hNGR3B2 of human CC neuregulin related ligand NRG3, a novel member of the epidermal growth CC factor (EGF)-like family of protein ligands that binds to the ErbB4 CC receptor, but not to the ErbB2 or ErbB3 receptor, and which activates CC ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal CC brain library. hNGR3B2 lacks amino acids 529-552 of hNGR3B1 (see CC AAW97618) but retains the EGF- like domain and is expected to exhibit CC biological activity. The invention provides human and murine NRG3 polypeptides (see AAW97617), expression vectors, host cells and methods CC polynucleotides and can be used to enhance the survival, proliferation or CC differentiation of cells having the ErbB4 receptor in vivo and in vitro. CC They can be used to prevent or treat damage to a nerve or damage to other CC cells. In particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial CC cells (e.g. multiple sclerosis). They can be used to treat patients whose cells (e.g. multiple sclerosis). They can be used to treat patients whose crowns system has been damaged by e.g. trauma, surgery, stroke, CC ischaemia, infection, metabolic disease, nutritional deficiency, can infection, metabolic disease, nutritional deficiency, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
           New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Godowski PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-JUL-1997;
24-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 78-81; 101pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-120882/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-JAN-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Domain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-MAY-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sduction; nervous system disorder; neurodegeneration;
therapy; diagnosis; splice variant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mark MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0052019P.
97US-00899437.
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for O-linked
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             related ligand NRG3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "transmembrane domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note= "EGF-like domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "extracellular domain, specifically claimed
Claim 5(a)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note= "hydrophobic region"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          glycosylation"
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ABG32000
ID ABG322
XX ABG32
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XX Homo
PN US20
XX Homo
PF 26-M
XX 27-JI
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PF 26-M
XX GET
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PR 24-J
PR 30-J
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PR 30-J
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X Novel
XX Novel
XX
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Neuregulin related ligand; NRG3; neuroprotective; cell therapy; epidermal growth factor-like domain; BGF-like domain; Bell's palsy; ExbB4 receptor detection; amyotrophic lateral sclerosis; paralysis; lou Gebrig's disease; spinal muscular atrophy; multiple sclerosis; neurodegenerative disorder; Alzheimer's disease; Parkinson's disease; epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness; Meniere's disease; neuropathy; dista syndrome; nerve deafness; autonomic neuropathy; dista syndrome; hereot-Marie-Tooth disease; Refsum's disease; Abetalipoproteinaemia; Tangier disease; Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   syndrome, nerve deafness, and Meniere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas syndrome, to treat disease of skeletal muscle of smooth muscle, such as muscular dystrophy or disease caused by skeletal or smooth muscle wasting. The products can also be used for detection, diagnosis, forching production of transgenic or knockout animals or for drug
   The invention describes a polypeptide comprising an a encoding an epidermal growth factor (EGF)-like domain binding characteristics of neuregulin related ligand polypeptide can be used to detect ErbB4 receptor in a sample, and also to prevent or treat disorders associ
                                                                                                                                                                                                                                                         A new neuregulin related ligand designated NRG3 has factor-like domain and binds to ErbB4 receptor, and or treat NRG3 associated disorders, particularly ner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUL-1997;
30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG32080 standard;
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                                                                                                                                                                                                      Example 1;
                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Godowski PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-MAR-2001; 2001US-00817647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-JUN-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dejerine-Scottas syndrome; human; NRGB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel human neuregulin related ligand NRG3B2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GETH ) GENENTECH INC.
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                                                                                                                                                                                                                                                                                                                                                                                                      ABK90730
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
                                                                                                                                                                                               Fig 4A-B; 60pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0053641P
98US-00107979
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhang
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Pred. No. 8.9e-20;
                                                                                              tactor (EGF)-like domain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
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and is
nerve
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                                        d (NRG3). NRO
a mammalian
                                                                                                                                   amino acid sequence
                                                                                                                                                                                                                                                               epidermal useful to damage.
                                                                                                     and having
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                                                                             NRG3
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associated with NRG3 such

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RESULT 11
AAW97617
ID AAW977
XX XX
AC AAW97
XX 10-MA
DT 10-MA
XX Neure
KW signa
XX Neure
KW neuro
COS Mus s
FT Domai
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Best Local S
Matches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Refsum's disease, Metachromatic Leukodystrophy, Pabry's disease, Refsum's disease, Metachromatic leukodystrophy, Pabry's disease and Dejerine-Scottas syndrome. This is the amino acid sequence of the novel human neurogulin related ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW97617;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                      New isolated neuregulin
treating nervous system
malignancy, Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mouse neuregulin related ligand NRG3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-MAY-1999
                                                                                                                                                                                               Godowski PJ,
                                                                                                                                                                                                                                                                                                                                                                     30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Domain
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                                                                                                                          N-PSDB;
                                                                                                                                                                                                                                                                                                09-JUL-1997;
24-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                        21-JAN-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Domain
                                                                                                                                                                                                                                                (GETH ) GENENTECH INC
                                                                                                                        1999-120882/10.
DB; AAX06987.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          transduction;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sduction; nervous system therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
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                                                                                                                                                                                               Mark MR,
                                                                                                                                                                                                                                                                                              97US-0052019P.
97US-00899437.
                                                                                                                                                                                                                                                                                                                                                                        98WO-US013411.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "EGF-like domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for O-linked glycosylation"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "extracellular domain, specifically
Claim 5(a)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note= "hydrophobic region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "transmembrane domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "mucin-like Ser/Thr-rich
                      related ligand-3 - used to develop disorders, e.g. stroke, ischaemia, disease or Down's syndrome.
                                                                                                                                                                                               Zhang
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Pred. No. 8.9e-20;
; Mismatches 0;
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                                                     products for infection,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sites
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Claim 5(b);

Page 59-62; 101pp; English

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  control with the sent damaged by e.g. trauma, surgery, stroke, ischaemia, infection, metabolic disease, nutritional deficiency, and toxic agents. NRG3 can also be used to treat motor neuron disorders such as amyotrophic lateral sclerosis (tou Gehrig's disease), Bell's palsy, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, and Menlere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, disease, abetalipoproteinemia, Tangder disease, Exabbe's disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas syndrome, to treat disease of skeletal muscle of smooth muscle, such as muscular dystrophy or diseases caused by skeletal or smooth muscle, for the products can also be used for detection, diagnosis, for the production of transgenic or knockout animals or for drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                  Neuregulin related ligand; NRG3; neuroprotective; cell therapy; epidermal growth factor-like domain; EGF-like domain; Bell's palsy; ExbB4 receptor detection; amyotrophic lateral sclerosis; paralysis; lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis; neurodegenerative disorder; Alzheimer's disease; Parkinson's disease; epileps; Huntingdon's chorea; pown's syndrome; nerve deafness; Meniere's disease; neuropathy; distal senorimotor neuropathy; autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease; Refsum's disease; Abetalipoproteinaemia; Tangier disease; Refsum's disease; Metachromatic leukodystrophy; Fabry's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                neuregulins. The invention provides human and murine NRG3 polypeptides (see also AAM97618), expression vectors, host cells and methods for the recombinant production of NRG3s. The NRG3 polypeptides and polypurcleotides and can be used to enhance the survival, proliferation or differentiation of cells having the ErbB4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial cells (e.g. multiple sclerosis). They can be used to treat patients whose
                                                                                                                                                                                                                                                                                                                                                                             Mouse novel neuregulin related ligand NRG3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays receptor binding characteristics that are distinct from those of other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This is the amino acid sequence of murine neuregulin related ligand NRG3, a novel member of the epidermal growth factor (EGF)-like family of protein ligands that binds to the ErbB4 creeptor, but not to the ErbB2 or ErbB3 receptor, and which activates ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from the nucleotide sequences of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                  05-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABG32061 standard; protein; 713 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 713
                                                                       Dejerine-Scottas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           al Similarity
47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
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                                                                       syndrome; mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 277; DB 2; 100.0%; Pred. No. 9.1e-20; ative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention describes a polypeptide comprising an amino acid sequence encoding an epidermal growth factor (EGF)-like domain, and having the binding characteristics of neurogulin related ligand (NRG3). NRG3 polypeptide can be used to detect ErbB4 receptor in a mammalian tissue sample, and also to prevent or treat disorders associated with NRG3 such as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, multiple classic dispersative disorders such as Alzheimer's disease, Parkinson's
                                Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Refsum's disease, Such as Charcot-Marie-Tooth disease, Refsum's disease, Metachromatic Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic Leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is the camino acid sequence of the novel mouse neuregulin related ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A new neuregulin related ligand designated NRG3 has an epidermal factor-like domain and binds to ErbB4 receptor, and is useful to or treat NRG3 associated disorders, particularly nerve damage.
                                                                                    Human
                                                                                                                        10-MAY-1999
                                                                                                                                                         AAW97618
                                                                                                                                                                                        AAW97618 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 713 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 1; Fig 4A-B; 60pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Godowski PJ, Mark MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-JUL-1997;
30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-MAR-2001; 2001US-00817647
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                               288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334
                                                                                    neuregulin
                                                                                                                                                                                                                                                                                                      1 HFKPCRDKDLAYCLNDGBCFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
                                                                                                                                                                                                                                                                                                                                                    47;
                                                                                                                                                                                                                                                                                                                                                                     Similarity
            sduction; nervous system disorder; neurodegeneration; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97US-0053641P.
98US-00107979.
                                                                                    related ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "ExtracelTular epidermal growth factor-like
domain. Specifically claimed in claim 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .362
/label= Extracellular_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
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                                                                                                                                                                                          protein; 720
                                                                                                                                                                                                                                                                                                                                                100.0%; Score 277; DB 5; 100.0%; Pred. No. 9.1e-20; tive 0; Mismatches 0;
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י
                                                                                      NRG3
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                                                                                                                                                                                                                                                                                                                                                                                   Length 713;
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CC This is the amino acid sequence of human neuregulin related ligand NRG3, CC a novel member of the epidermal growth factor (EGF)-like family of CC protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or CC ErbB3 receptor, and which activates ErbB4 receptor tyrosine compromed to the ErbB2 or CC protein ligands that binds to the ErbB4 receptor tyrosine sequence of CC achDa clone (see AAXO5988) from a foetal brain library. The EGF-like CC candin of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays creceptor binding characteristics that are distinct from those of other commitments. Anyofelo. The invention provides human and murine NRG3 is provided in CC AAM97619. The invention provides human and murine NRG3 polypeptides (see CC also AAM9761). expression vectors, host cells and methods for the CC recombinant production of NRG3s. The NRG3 polypeptides and crecombinant production of NRG3s. The NRG3 polypeptides and comply can be used to relate the survival, proliferation or CC differentiation of cells having the ErbB4 receptor in vivo and in vitro. CC manal cell growth such as demyelination, or damage to or damage to other NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney CC cells (e.g. multiple sclerosis). They can be used to treat patients whose CC manal cell growth such as demyelination, or damage or loss of glial CC cells (e.g. multiple sclerosis). They can be used to treat patients whose CC malignancy, or toxic agents. NRG3 can also be used to treat motor neurodegenerative disorders such as anyotrophic disease, nutritional deficiency, stroke, ischaemia, infection, metabolic disease, huntington's chorea, Down's CC type the products as such as sectores; Huntington's chorea, Down's CC type the products and meniors's disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, CC disease, metabromatic leukodystrophy, Fabry's disease including post-polio syndrome, hereditary sectored products can also be used for detection, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
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treating nervous system
malignancy, Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Кеу
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Godowski
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24-JUL-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999-120882/10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mark MR,
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97US-00899437.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note= "extracellular domain, specifically claimed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .394
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "transmembrane domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  related ligand-3 - used to develop
disorders, e.g. stroke, ischaemia,
disease or Down's syndrome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhang
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RESULT 14
AAY05452
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                                                 Query Match
Best Local S
Matches 47
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                                                                                                                                      The HIF is involved in the regulation of cell growth. Detection of different levels of expression of the HIF gene can be used for the diagnosis of disorders, e.g. in the neural system. In particular, detection of different levels of HIF gene expression in cells or body fluid of an individual can be used for diagnosing cancer. The products can also be used in the treatment of disorders involving abnormal levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 720
                                                                                                  Sequence 720 AA;
                                                                                                                                                                                                                                          Disclosure; Page 97-99; 118pp; English.
                                                                                                                                                                                                                                                                              New isolated heregulin-like factor - used to develop products for the diagnosis and treatment of disorders involving regulation of cell growth,
                                                                                                                                                                                                                                                                                                                     WPI; 1999-095327/08
                                                                                                                                                                                                                                                                                                                                             Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-DEC-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        neural system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human heregulin-like factor sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY05452;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                screening
                                                                                                                                                                                                                 This sequence is the human heregulin-like factor (HLF) of the invention.
                                                                                                                                                                                                                                                                    particularly cancers.
                                                                                                                                                                                                                                                                                                                                                                      (HUMA-)
                                                                                                                                                                                                                                                                                                                                                                                                            17-JUN-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47;
                        1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
                                                                                                                             activity
                                                                                                                                                                                                                                                                                                                                                                        UNIV GEORGETOWN.
                                                                                                                                                                                                                                                                                                                                                                                     HUMAN GENOME SCI INC
                                                             Similarity
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HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard; protein;
                                                                                                                                                                                                                                                                                                                                             Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disorder; cancer
                                                                                                                                                                                                                                                                                                                                                                                                             97US-0049942P
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                                                 100.0%; Score 277; DB 2;
100.0%; Pred. No. 9.2e-20;
. Mismatches 0;
                                                                                                                                                                                                                                                                                                                                             King
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                                                                                                                                                                                                                                                                                                                                              8
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                                                                          Length 720;
                                                    Indels
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                                                    Gaps
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RESULT 15 ABG32065 ID ABG32 XX

ABG32065 standard;

protein; 720

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The invention describes a polypeptide comprising an amino acid sequence encoding an epidermal growth factor (EGP)-like domain, and having the binding characteristics of neuregulin related ligand (NRG3). NRG3 concluded the can be used to detect ExbB4 receptor in a mammalian tissue sample, and also to prevent or treat disorders associated with NRG3 such as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, multiple sclerosis, Huntingdon's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Refaum's disease, Metachromatic leukodystrophy, Pabry's disease and Dejerine-Scottas syndrome. This is the amino acid sequence of the novel human neuregulin related ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Neuregulin related ligand; NRG3; neuroprotective; cell therapy; epidermal growth factor-like domain; EGF-like domain; Bell's palsy; ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis; lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis; neurodegenerative disorder; Alzheimer's disease; Parkinson's disease; epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafiness; Meniere's disease; neuropathy; distal sensorimotor neuropathy; autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease; Refsum's disease; Abetalipoproteinaemia; Tangier disease; krabbe's disease; Metachromatic leukodystrophy; Fabry's disease; bejerine-Scottas syndrome; human; gene; ss; NRG3B1.
                                                                                                                                                                                                                                                                                                                                                                                                          A new neuregulin related ligand designated NRG3 has an epidermal growth factor-like domain and binds to ErbB4 receptor, and is useful to prevent or treat NRG3 associated disorders, particularly nerve damage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-617760/66.
N-PSDB; ABK90731.
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Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Godowski PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-JUL-1997;
30-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                       Example 1; Fig 4A-B; 60pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human novel neuregulin related ligand NRG3B1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GETH ) GENENTECH INC.
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98US-00107979.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= Extracellular_domain
/note= "Specifically claimed in claim 5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= EGF-like domain
/note= "Extracellular epidermal growth factor-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zhang D;
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Query Match 100.0%; Score 277; DB 5; Best Local Similarity 100.0%; Pred. No. 9.2e-20; Matches 47; Conservative 0; Mismatches 0;

Length 720; Indels

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Gaps

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Sequence 720 AA;

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286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
                      HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Scoring table: Sequence:

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1: /cgn2 6/ptodata/1.

2: /cgn2 6/ptodata/1.

3: /cgn2 6/ptodata/1.

4: /cgn2 6/ptodata/1.

5: /cgn2 6/ptodata/1.

6: /cgn2 6/ptodata/1.

Sequence

3, Appli 11, App 11, App 62, Appl 62, Appl 221, App 221, App 415, Appl 15, Appl 10, Appl 10,

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
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/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
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US-08-899-437-3
US-09-126-121-2
US-08-899-437-23
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US-08-899-437-2
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US-08-753-007A-12
US-08-753-007A-12
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US-08-417-640A-3
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                                                                  Query Match
Best Local S
Matches 47
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GENERAL INFORMATION:
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INFORMATION FOR SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: '94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
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LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: CODILEY, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
                                                                                                                                                                                                                                                            FEATURE:
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                        IDENTIFICATION METHOD: OTHER INFORMATION:
                                                                                                                                                                                                                  NAME/KEY: NRG3 EGF-like LOCATION: 1-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 24
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 24-Jul-1997
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ilarity 100.0%;
Conservative
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                                                                                                                                                                                                                                                                                                                                                                     ID NO:
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US-09-097-681-17

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US-08-470-335-221

US-08-470-335-221

US-08-470-335-221

US-08-411-295F-55

US-08-411-295F-136

US-08-411-295F-136

US-08-411-295F-136

US-08-411-295F-136

US-08-456-201-10

US-08-456-201-10

US-08-456-201-10

US-09-020-880-2

US-09-101-544-2

US-09-101-544-2

US-09-101-544-2

US-09-101-544-2
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                                                                Score 277; DB 3;
Pred. No. 3.1e-26;
Mismatches 0;
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Result No.

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RESULT 3
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Patent No. 6121415
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                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Godows
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MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC DOS/MS-DOS
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LENGTH: 47 amino acids
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CURRENT APPLICATION DATA:
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TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
                                                                                                                                           TITLE OF INVENTION: ErbB Receptor-Specific NeTITLE OF INVENTION: Ligands and Uses Therefor NUMBER OF SEQUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 650/225-2066
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COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/899,437 FILING DATE: 24-Jul-1997 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: NRG3 EGF-like domain/amino acid seq LOCATION: 1-47
IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Conley, Deirdre L. REGISTRATION NUMBER: 36, REFERENCE/DOCKET NUMBER:
                                                                                           STREET:
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AXPE: 3.5 inch, 1.44 Mb floppy disk
computer: IBM PC compatible
oPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA;
APPLICATION NUMBER: US/C
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Patent No. 6252051
GENERAL INFORMATION:
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                                                                     TELEFAX: 650/952-9881 INFORMATION FOR SEQ ID NO:
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MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
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REFERENCE/DOCKET NUMBER: P1
TELECOMMUNICATION INFORMATION:
                          SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
                                                                                                                     TELECOMMUNICATION INFORMATION:
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NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,
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                                                                                                                                                                                                               APPLICATION NUMBER: US/09/126,121 FILING DATE: 30-Jul-1998 CLASSIFICATION:
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LOCATION:
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                  Amino Acid
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ErbB Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
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BER: P1084R1D1
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US-09-553-769-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/09097681 Patent No. 6727077
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LENGTH: 48
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 00/20522
CURRENT APPLICATION NUMBER: US/09/553,769
CURRENT FILING DATE: 2000-04-21
                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Yarden, Yosef
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ErbB-4 RECEPTOR TYROSINE
TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Harari, Daniel APPLICANT: Yarden, Yosef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Mus musculus
                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC COMPATIBLE
COMPATER: PC-CDOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA;
                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                        APPLICANT: Hijázi, Mai
APPLICANT: Ruben, Steve
TITLE OF INVENTION: Heregulin-Like Factor
NUMBER OF SEQUENCES: 22
                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                              ADDRESSEE: Human Genome Sciences, Inc
STREET: 9410 Key West Avenue
CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity hes 47; Conserv
                    FILING DATE:
CLASSIFICATION:
                                                       APPLICATION NUMBER:
                                                                                                                                                                              COUNTRY: U
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OTHER INFORMATION:
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King, C. Richter
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Pred. No. 3.1e-26;
0; Mismatches 0;
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Pred. No. 3.1e-26;
; Mismatches 0;
                                                                                       Version #1.30
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GENERAL INFORMATION:
APPLICANT: Godows)
Query Match 100.0%; Score 277; DB 3;
Best Local Similarity 100.0%; Pred. No. 2.5e-25;
Matches 47; Conservative 0; Mismatches 0;
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INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acid
                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: P1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,4:
FILING DATE: 24-Jul-1997
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LENGTH: 157 amino acids
TYPE: amino acid
                                                                                                                                                                  FEATURE:
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MEDIUM TYPE: 3.5 inch,
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FILING DATE: 17-JUN-1997
ATTORNEY/AGENT INFORMATION:
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                                                                                                                            NAME/KEY:
LOCATION:
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REGISTRATION NUMBER: 40,302
REFERENCE/DOCKET NUMBER: PF
                                                                                          OTHER INFORMATION:
                                                                                                                                                                                    TOPOLOGY:
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                                                                                                             IDENTIFICATION METHOD:
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                                                                                                                                                                                                     Amino Acid
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                                                                                                                                                                                                                  360 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
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                                  Length 360;
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 Indels
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US-09-126-121-7
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                                                                                                                                                                                  Sequence 3, Application US/08899437
Patent No. 6121415
GENERAL INFORMATION:
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Best Local Similarity
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APPLICANT: Godows
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CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: 3.5 inch. 1.44 Mb floppy disk
COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,121
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
30-Jul-1998
                                                                                               TITLE OF INVENTION: ErbB Receptor-op-or-TITLE OF INVENTION: Ligands and Uses Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY:
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ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REGISTRATION NUMBER: P10
                                                                                           NUMBER OF SEQUENCES: 2
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                                                                                                                                                                      APPLICANT:
STREET: 1 DNA PLA
CITY: South San Francisco
STATE: California
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Amino Acid
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                                                                                                                                                                      Godowski,
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                                                                       Genentech, Inc.
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                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 277; DB 3; 100.0%; Pred. No. 2.5e-25;
                                                                                                                                                , Paul J., Mark, Melanie Rose, Zhang, Dong
ErbB Receptor-Specific Neuregulin Related
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Best Local Similarity
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INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 362 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P108
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                 TELEFAX: 650/952-9881 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb 1
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: EIGH KEUPPUTTILE OF INVENTION: Ligands and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA
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MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC COMPATING SYSTEM: PC-DOS/MS-DOS
COETTA DE WIJELT: (PC-DOS/MS-DOS
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SEQUENCE CHARACTERISTICS:
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REGISTRATION NUMBER: 36
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
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                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                               CITY: South San Francisco
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 362 amino acids
TYPE: Amino Acid
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                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                        APPLICATION NUMBER:
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                                                     CELEPHONE:
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1 DNA Way
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VENTION: ErbB Receptor-Specific Neuregulin Related
VENTION: Ligands and Uses Therefor
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                                                       650/225-2066
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24-Jul-1997
N: מיי
                                                                                                                                                                                       30-Jul-1998
                 ID NO: 3:
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                                                                                                         Query Match
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Best Local Similarity
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APPLICANT: GOdOwski, Paul J., Mark, PITILE OF INVENTION: ErbB Receptor-SpeTITLE OF INVENTION: Ligands and Uses NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirotre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
                                                                                                                                                                                                                                                                                                                        TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 696 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: WinPatin (Ge
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch., 1.44 mb floppy
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                        NAME/KEY: Human NRG3B
LOCATION: 1-696
IDENTIFICATION METHOD:
OTHER INFORMATION:
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                                                                                      Local
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286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
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                      1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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47; Conservative
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California
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Amino Acid
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                                                                 100.0%; Score 277; DB 3; 100.0%; Pred. No. 4.9e-25; tive 0; Mismatches 0;
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ErbB Receptor-Specific Neuregulin Related
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                                                                                                     Length 696;
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RESULT 12

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Best Local Similarity
Matches 47; Conserv
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APPLICANT: Godows
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TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
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TITLE OF INVENTION: ErbB Receptor-Specific Neu
TITLE OF INVENTION: Ligands and Uses Therefor
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LENGTH: 696 amino acid
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                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
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LOCATION:
                                                                                                                                      CITY: South San Francisco STATE: California
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REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
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                                                                                                                 COUNTRY:
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Amino Acid
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100.0%; Pred. No. 4.9e-25;
ative 0; Mismatches 0;
                                                                                                                                                                                                                                                                          , Paul J., Mark, Melanie Rose, Zhang, Dong
ErbB Receptor-Specific Neuregulin Related
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US

ATTORNEY/AGENT INFORMATION:

FILING DATE: 24 CLASSIFICATION:

24-Jul-1997

US/08/899,437

TELECOMMUNICATION INFORMATION:

REGISTRATION NUMBER: 36,487 REFERENCE/DOCKET NUMBER: P1 NAME: Conley, Deirdre REGISTRATION NUMBER: 3

P1084R1

TELEPHONE:

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RESULT 14
U%-09-126-121-2
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Patent No. 6252051
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                                                                                                                                           TELEFAX: 650/952-9881 INFORMATION FOR SEQ ID NO: 2:
                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 713 amino acid
                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
ODERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
                                                                                                                                                                                                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                        SOFTWARE: WinPatin (Gener
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/0:
FILING DATE: 30-Jul-1998
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             NAME/KEY:
                                                                                                                                                                             TELEPHONE:
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IDENTIFICATION METHOD:
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                                                                                      Amino Acid
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                                                                                                       713 amino acids
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               Mouse NRG3 (mNRG3)/amino acid seq. 1-713
                                                                     Linear
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Job time : 44 secs Search completed: May

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Best Local Similarity 100
Matches 47; Conservative
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Patent No. 6121415
                                                                                                                   Matches
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Best Local Similarity
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APPLICANT: Godows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: WinDatin (Generitech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul 1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 720 amino acids
TYPE: Amino Acid
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                                                                                                                                                                                                                                                                                                                                                                                                   NAME: CONTEY, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
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MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: INCH PC compatible
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                                                                                                                                                                                                    IDENTIFICATION METHOD: OTHER INFORMATION:
                                                                                                                                                                                                                                   NAME/KEY: hNRG3B1 amino acid sequence LOCATION: 1-720
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OPERATING SYSTEM:
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100.0%; Pred. No. 5e-25;
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Query Match

100.0%; Score 277; DB 3 100.0%; Pred. No. 5e-25;

DB 3; Length 713;

NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq. LOCATION: 1-713 IDENTIFICATION METHOD: OTHER INFORMATION:

TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 713 amino acids
TYPE: Amino Acid

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TOPOLOGY: Linear

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Result
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Maximum Match 100%
Listing first 45 summaries
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Query
Match
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Copyright (c) 1993 - 2005 Compugen Ltd.
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O7rtv8 homo sapien
O9esa9 rattus norv
O9esa9 rattus norv
O9esb0 rattus norv
O9wx4 mus musculu
O8wwg1 homo sapien
O7rtw0 homo sapien
O7112 bos taurus
O15491 homo sapien
O6icv5 homo sapien
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its

-!- SIMILARITY:	-!- PTM: Extensive similarity).	ין ויי אַטי װּ װּ	- -		- J H LQ	-!- DEVELOPMENTAL S detected mainly brain, spinal o	<u>:</u>		<pre>CC -!- FUNCTION: Direct ligand for CC Binding results in ligand-st CC activation of the receptor.</pre>			TISSUE=Brain; MEDLINE=97420720; Zhanq D., Sliwkows	[1] SEQUENCE	(Mouse) stazoa; sheria;	Pro-neuregulin-3 p	16-OCT-2001 (Rel. 16-OCT-2001 (Rel. 16-OCT-2001 (Rel. 05-JUL-2004 (Rel.	્રુઝ ક્		44 90 32.5	1 92.5 33. 2 91.5 33.	9 98 35.4 0 97 35.0	7 99 35.7 8 98.5 35.6	5 102.5 37.0 6 102.5 37.0	3 102.5 37.0 4 102.5 37.0	2 102.5 37.0
ngs to the neuregulin family.	glycosylation precedes the proteolyt	age close to the plasma memb the release of the soluble	<pre>similarity). ptor binding is elicited entirely</pre>	Oww.in: The cycopiasmic domain may be involved in the first first of trafficking and proteolytic processing. Regulation roteolytic processing involves initial intracellular	spinal cord, and	B: Detected as early as 11 dpc. the nervous system. At 16 dpc, trigeminal, vestibular-cochles	pressed in sympathetic, moto	as an type I membrane	the ERBB4 tyrosi imulated tyrosin Does not bind to	:9562-9567(1997).	Godowski P.J.; ural tissue-enriched p	l=9275162; DOI=10.1073/pnas.94. (., Mark M., Frantz G., Akita R		Chordata; Craniata; Vertebrata; Eut Rodentia; Sciurognathi; Muridae; Mu	sor (Pro-NRG3) (Cont	reated) ast sequence update) ast annotation update)	ARD; PRT; 713 AA.	ALIGNMENTS	850 1 NRG2_HUMAN 868 1 NRG2_RAT	92 2 001768 13 1 JAG3_BRARE 56 2 086WT0	97 2 Q7QIQ6 54 2 Q810X1	89 2 Q91MZ0 02 1 NRG1 CHICK	00 2 Q9ESB1 82 2 Q9ESA5	2	23 2 Q9ESA2
	tic cleavage (By	orane on the growth factor	by the EGF-like	ion of the lar domain	numerous bra	At 13 dpc detected in the ur, and spinal	r similarity). or, and sensory	protein a	ase receptor. phorylation and GF receptor,		rotein	18.9562;		Euteleostomi; Murinae; Mus.	gulin-3 (NRG-	•			O14511 homo mapien O35569 rattum norv	001768 caenorhabdı Q90y54 brachydanio	anophe	Q91mz0 lumpy skin Q05199 gallus gall	rattue	rattus r pro-n	Q9esa2 rattus norv

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P56975;
16-OCT-2001
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DISULFID
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TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as low modified and this statement is not removentities requires a license agreement (ST or send an email to license@isb-sib.ch).
                                                                                                                                        MEDLINE=97420720; PubMed=9275162; DOI=10.1073/pnas.94.18.9562; Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y Hillan K., Crowley C., Brush J., Godowski P.J.; Hillan K., Crowley C., Brush J., Godowski P.J.; When the control of the 
                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-OCT-2001 (Rel. 40, 05-JUL-2004 (Rel. 44, Pro-neuregulin-3 precu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
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                                                                                                                       Proc.
                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                         TISSUE=Fetal brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=NRG3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nterPro;
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GO:0007243; P:protein kinase cascac
                                     C. Natl. Acad. Sci. U.S.Á. 94:9562-9567(1997).

FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation a activation of the receptor. Does not bind to the EGF receptor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MGI:1097165;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IPR000742; EGF_2.
IPR006209; EGF_like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   713
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 40, Last sequence update)
. 44, Last annotation update)
precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nrg3.
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77369 MW;
                                                                                                                                                                                                                                                                                                                                                                                                        Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata;
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    Pro-neurequlin-3, membrane-bound form.
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By simila.
By simila.
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Poly-Ser.
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Poly-Thr.
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EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Internal signal sequence Cytoplasmic (Potential). Ser/Thr-rich.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neuregulin-3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pro-neuregulin-3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 277; DB 1;
Pred. No. 8.6e-26;
                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3y similarity.
3y similarity.
3y similarity.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
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RESULT NRG1\_XE ID NE AC OS

NRG1\_XENLA 093383; Q9W6N0;

STANDARD;

PRT;

677

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Matches
                                                                         Query Match
Best Local
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DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00008; EGF; 1.
Pfam; PF02158; Neuregulin; 1.
SMART; SM00181; EGF; 1.
PROSITE; PS00022; EGF 1; 1.
PROSITE; PS01186; EGF 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIM:
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DOMAIN
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                                                                                                                                                                                                                                                DOMAIN
DOMAIN
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InterPro; IPR006209; EGF like.
InterPro; IPR006210; IEGF.
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                                                                                                                      SEQUENCE
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                                                                                                                                                                                                                                                                               DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002154; Neuregulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GO:0005576; C:extracellular; NAS.
GO:0005887; C:integral to plasma membrane; NAS.
GO:00080887; F:growth factor activity; NAS.
GO:0008087; F:transmembrane receptor protein tyrosine kin.
GO:0030297; F:transmembrane receptor protein tyrosine kin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PTM: Proteolytic cleavage close to external face leads to the release form (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: Exists as an type I membrane protein and a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity). TISSUB SPECIFICITY: Highly expressed in most regions of the bra with the exception of corpus callosum. Expressed at lower level testis. Not detected in heart, placenta, lung, liver, skeletal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERBB2 or ERBB3 receptors. SUBCELLULAR LOCATION: Exi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GO:0007170; P:transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: Belongs to SIMILARITY: Contains 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          proteolytic processing involves initial
dimerization (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of trafficking and proteolytic processing. Regulation proteolytic processing involves initial intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domain (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      muscle, kidney, pancreas, spleen, thyn
intestine, colon and peripheral blood
286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P01133; 1JL9.
HGNC:7999; N
                                                                                                                                                                                                                                                                                                                                                                                     ; PS00022; EGF_1; 1.
; PS01186; EGF_2; 1.
; PS50026; EGF_3; 1.
e domain; Growth fact
                                                                         Similarity
                      HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL
HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ne, colon and peripheral blood leukocytes.

The cytoplasmic domain may be involved in the regulation
                                                                                                                      720
                                                                                                                                                                                                                                                                                            361
382
105
                                                            Conservative
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                                                                                                                                                   21
135
260
265
304
                                                                                                                        77900
                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                        factor; Multigene family;
                                                                                                                         MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the neuregulin family. EGF-like domain.
                                                            0;
                                                                                                                                                                                Poly-Ala.
Poly-Thr.
Poly-Ser.
Poly-Thr.
                                                                                                                                                                                                                                                Poly-Ala.
Poly-Ala.
                                                                                                                                      By
By
                                                                                                                                                                                                                                                                                             Cytoplasmic (
Ser/Thr-rich.
                                                                                                                                                                                                                                                                                EGF-like.
                                                                                                                                                                                                                                                                                                                          Extracellular (Potential)
Internal signal sequence
                                                                                                                                                                                                                                                                                                                                                           Neuregulin-3.
                                                                                                                                                                                                                                                                                                                                                                          Pro-neuregulin-3,
                                                            Score 277; DB 1;
Pred. No. 8.7e-26;
; Mismatches 0;
                                                                                                                                      y similarity.
y similarity.
y similarity.
                                                                                                                         A4D6F10DDB95A693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           receptor protein tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               precedes
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                                                                                                                                                                                                                                                                                                               gnal sequence
(Potential).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plasma membrane
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                                                                                                                                                                                                                                                                                                                                                                           membrane-bound
                                                                                                                           CRC64;
                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                           Transmembrane.
mbrane-bound form.
                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 growth
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                                                                                            720;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kin.
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MEDLINE-9316087; PubMed=10383827; DOI=10.1006/mcne.i999.0759;
Yang J.F., Zhou H., Choi R.C., Ip N.Y., Peng H.B., Tsim K.W.K.;
"A cysteine-rich form of Xenopus neuregulin induces the expression of acetylcholine receptors in cultured myotubes.";
Mol. Cell. Neurosci. 13:415-429 (1999).
-i- FUNCTION: Direct ligand for the ERBB tyrosine kinase receptors.
-i- FUNCTION: Exists as a type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-pound form does not seem to be active (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-OCT-2001
16-OCT-2001
05-JUL-2004
                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. (ISOFORM ALPHA1), AND ALTERNATIVE SPLICING.
MEDLINE=98352126; PubMed=968585; DOI=10.1016/S0169-328X(98)00085-0;
Yang J.F., Zhou H., Pun S., IP N.Y., Peng H.B., Tsim K.W.K.;
"Cloning of cDNAs encoding xenopus neuregulin: expression in myotoma muscle during embryo development.";
Brain Res. Mol. Brain Res. 58:59-73(1998).
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=8355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xenopus laevis (African clawed frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pro-neuregulin-1
                                                                                                                                                                                                                                   send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEVELOPMENTAL STAGE: Strong expression in developing brain and spinal cord of the embryo. Also expressed in the myotomal muscle DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IsoId=093383-1; Sequence=Displayed;
Name=CRD; Synonyms=CRD-NRG1, Cysteine-rich domain;
IsoId=093383-2; Sequence=VSP 003449, VSP 003450;
TISSUE SPECIFICITY: Isoform alphal is expressed in brain ar muscle. Isoform CRD is expressed in brain and spinal cord, very low level in muscle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PTM: Proteolytic cleavage close to external face leads to the release
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Event=Alternative splicing; Named isoforms=2; Comment=Additional isoforms seem to exist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALTERNATIVE PRODUCTS:
                                                                                                                 AF076618;
AF142632;
Q12780; 1H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or beta-type EGF-like
                                                                                                                                                                                                                                   s requires a license agreement (S an email to license@isb-sib.ch).
IPR000742; EGF 2.
; IPR006209; EGF like.
; IPR007110; Ig-like.
; IPR007154; Neuregulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Extensive glycosylation precedes the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rel.
(Rel.
(Rel.
                                                                                                                          1HRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Belongs to the neuregulin family.
Contains 1 EGF-like domain.
Contains 1 immunoglobulin-like C2-type domain.
                                                                                                                                               AAC26804.1; -.
AAD33893.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptor binding is elicited
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last
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(Pro-NRG1) [Contains: Neuregulin-1].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domains,
                                                                                                                                                                                                                                                           (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the plasma membrane of the soluble growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exist. Isoforms
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteolytic cleavage
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; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth
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RESULT
Q6TGK9
     DRR RR RR COCCERRANCE COCCERRA
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Best Local
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Q6TGK9;
Q5TGK9;
05-JUL-2004 (TrEMBLrel. 2
05-JUL-2004 (TrEMBLrel. 2
05-JUL-2004 (TrEMBLrel. 2
                                                                                             -1- SIMILARITY: (
EMBL; AY421758; I
GO; GO:0005102; I
GO; GO:0009790; I
InterPro; IPR0007
                                                                                                                                                                                                                                                                                                                               05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, Neuregulin 1 alpha isoform Oryctolacms ~~~~~
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DOMAIN
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DOMAIN
                                                                                                                                                                                        Hendrickx J.; Submitted (SEP-2003) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                         InterPro;
                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                             Oryctolagus cuniculus (Rabbit)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PRO1089; NEUREGULIN.

PROSITE; PS00022; EGF 1; 1.

PROSITE; PS01186; EGF 2; 1.

PROSITE; PS50026; EGF 3; 1.

PROSITE; PS50835; IG LIKE; 1.

PROSITE; PS50835; IG LIKE; 1.
                                         InterPro;
                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunoglobulin
CHAIN 1
                     InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF02158; Neuregulin;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HLIKCSDKEKTYCVNGGECYVLNGITSSNQFMCKCKPGFTGARCTE
                     IPR003599;
IPR007110;
                                                       109790; P:embryonic development; IERO000742; EGF 2. IPR006209; EGF like. IPR006210; IEGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         223
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                                                                                                                                                                                                                                 N.A.
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1 259 Neuregu
1 677 Pro-neu
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                                                                                                                                AAR00250.1; -. F:receptor binding;
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677
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Ig.
Ig-like.
Ig_c2.
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                                                                                                                                                                        EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                          (Fragment).
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By similarity.
By similarity.
By similarity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 126.5; DB 1
Pred. No. 3.8e-07;
0; Mismatches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
MAEKKYVKEGKGRKGKKCDRKGKAEGSDQAAASPKLKE
IKTQSVQEGKKLVLKCQAVSEQPSLKERWFKCEKEIGAKNK
PDSKPEHIKIRGKKKSSELQISKASSADNGEYKCMVSNQLG
NDTVTVNVTIVPK -> MSEDTAEGLQNQCSEQSSDPPSAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Internal signal sequence Cytoplasmic (Potential).

Ig-like C2-type.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RCQNYVMASFYK (in isoform CRD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /FTId=VSP_003449.
KPGFTGARCTETDPLRVVRSEKHLGIEFME
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SEKICIIPILACLISLCLCIAGLKWVFVDKIFEYDSPTHLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /FTId=VSP_003450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FKFGTSLLPTE (in isoform CRD).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PGHRGQDLILYTDTAPSTLVPSSVRTLPVIIPTTDSKAAVT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pro-neuregulin-1,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49279E8F5BAE396F CRC64;
                                                                                                                                      IEA.
                                                                                                                                                                            domain
                                                                                                                    ΙEΑ
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                                                                                                                                                                                                                                                                                                                                                                update)
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                                                                                                                                                                                              databases
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Pfam; PF00008; 1 Pfam; PF00047; Pfam; PF02158; 1

Neuregulin; 1

interPro;

IPR002154; Neuregulin.

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178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE

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                                   Query Match
Best Local S
Matches 16
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Best Local S
Matches 16
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GO; GO:0009790; P:embryonic development; II
InterPro; IPR000742; EGF 2:
InterPro; IPR006209; EGF like.
InterPro; IPR006210; IEGF.
InterPro; IPR007110; IG-like.
InterPro; IPR003598; IG-2:
InterPro; IPR003598; IG-2:
InterPro; IPR00214; Neuregulin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PRO1089; NEUREGULIN.
SMART; SM00181; EGF; 1.
SMART; SM00409; IG; 1.
SMART; SM00409; IGc2; 1.
PROSITE; PS00022; EGF 1; 1.
PROSITE; PS01186; EGF 2; 1.
PROSITE; PS50036; EGF 3; 1.
PROSITE; PS50835; IG LIKE; 1.
EGF-like domain.
                                                                                                   PRINTS; PRO1089; NEUREGULIN.
SMART; SM00181; EGF; 1.
SMART; SM00408; IGC2; 1.
PROSITE; PS00022; EGF=1; 1.
PROSITE; PS01186; EGF=2; 1.
PROSITE; PS50026; EGF=3; 1.
PROSITE; PS50035; IG_LIKE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1998
01-JAN-1998
01-MAR-2004
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
Velasco J.A., Feijoo E.,
Submitted (APR-1997) to t
-i- SIMILARITY: Contains
                                                                                 PROSITE;
EGF-like
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  035947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
                                                                                                                                                                                                                                                                                                                EMBL; U96612; AAB71
HSSP; Q12780; 1HRE.
                                                                                                                                                                                                                                                                                                                                                                                                                      Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Mesocricetus auratus (Golden hamster).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Neuregulin.
                                                                                                                                                                                       Pfam; PF02158; Neuregulin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                              Similarity
HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ
                                                                                               domain
                                                                                                                                                                                                                                                                                                                            2; AAB71812.1;
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3 (TrEMBLrel. 05,
1 (TrEMBLrel. 26,
                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               394
                                   41.0%; Score 113.5; DB 2; llarity 34.8%; Pred. No. 1.1e-05; Conservative 14; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                 AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42980 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                      Rodentia; Sciurognathi;
                                                                                  50890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.0%; Score 113.5; DB 2
34.8%; Pred. No. 9.1e-06;
tive 14; Mismatches 15
                                                                                                                                                                                                                                                                                                                                                 E., Avila M.A., Notario V.; to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                        EGF-like
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Cricetinae;
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Best Local S
Matches 16
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Pfam; PF000047; ig; 1.
Pfam; PF02158; Neuregulin; 1.
PRINTS; PR01089; NEUREGULIN.
PROSITE; PS00022; EGF 1; 1.
PROSITE; PS01186; EGF 2; 1.
PROSITE; PS50185; EGF 3; 1.
PROSITE; PS50835; IG LIKE; 1.
SEQUENCE 462 AA; 50848 MW;
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                                                                                                            NRG1 HUMAN STANDARD; PRT; 639 AA. (202297; 0.14667; P98202; (202298; Q02299; Q07111; Q1277: Q12780; Q127781; Q12782; Q12783; Q12784; Q9UPE3; 16-0CT-2001 (Rel. 40, Created) 16-0CT-2001 (Rel. 40, Last sequence update) 25-0CT-2004 (Rel. 45, Last annotation update) Pro-neuregulin-1 precursor (Pro-NRG1) [Contains: Neuregulin-1 differentiation factor) (Heregulin) (HRG) (Breast cancer cell differentiation factor p45) (Acetylcholine receptor inducing (ARIA) (Sensory and motor neuron-derived factor) (Glial growt)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-2004 (TrEMBLrel.
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01-MAR-2004 (TrEMBLrel
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GO; GO:0009790; P:embryonic development; IEA.
InterPro; IPR000712; EGF 2.
InterPro; IPR006209; EGF like.
InterPro; IPR007110; Ig-Tike.
InterPro; IPR007154; Neuregulin.
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Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neuregulin 1 isoform ndf43.
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    Name=NRG1; Synonyms=GGF, Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=12145742
                                                                                factor)
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Pred. No. 1.1e-05;
4; Mismatches 15
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                                            HRGA,
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                                                                                                                                                            activity)
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MEDLINE=99455251; PubMed=10523851; DOI=10.1038/sj.onc.1202950; Wang X.-Z., Jolicoeur E.M., Conte N., Chaffanet M., Zhang Y., Mozziconacci M.-J., Feiner H., Birnbaum D., Pebusque M.-J., Ror "Gamma-heregulin is the product of a Chromosomal translocation the DOC4 and HGL/NRG1 genes in the MDA-MB-175 breast cancer cel
                                                                                                                                                                                                                                                                              MEDLINE=93366731; PubMed=7689552;
Culouscou J.-M., Plowman G.D., Carlton G.P.
"Characterization of a breast cancer cell
specifically activates the HER4/p180erbB4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schaefer G., Fitzpatrick V.D., Sliwkowski M.X.; "Gamma-heregulin: a novel heregulin isoform that is an autocrine growth factor for the human breast cancer cell line, MDA-MB-175.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE :... MEDLINE=92208945;
Bacus S.
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                                                                                                                                                                                                                                                                                                                                                                                                                                            Eppenberger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Breast cancer;
MEDLINE=97472144; PubMed=9333014; DOI=10.1038/sj.onc.1201317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Glial growth factors are arctime";
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"Isolation of the neu/HER-2 stimulatory ligand: a 44 kd
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Janssen A.M., Ben-Baruch N.,
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CHROMOSOMAL
                                           Oncogene 18:5718-5721(1999).
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 19-27.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                            CHROMOSOMAL TRANSLOCATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kobayashi K.,
                                                                                                                                                                                                                                                          Biol.
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                                                                                                                                                                                                                                                          Chem. 268:18407-18410(1993).
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Yarden Y.
TRANSLOCATION
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Hricks M., Danehy F., Misumi D., Sudhalter J.,
Wroblewski D., Lynch C., Baldasarre M., Hiles I.,
Isuan J.J., Totty N.F., Otsu M., McBurney R.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              factors are alternatively spliced erbB2 ligands
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 FROM N.A.
Herzer S.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=1348215; DOI=10.1016/0092-8674(92)90131-U;
S., Koski R.A., Lu H.S., Wen D., Ogden S.G.,
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Trollinger D.B.,
                                                                                                                                                                                                                                                                                                 Carlton G.W., Green J.M., Scancer cell differentiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mammary tumor cells.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kueng W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H., Lewis G.D., Shepard H.M., Vandlen R.L.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8),
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                                                                                                                                                                                                                                                                              receptor.";
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Jacobsen V.L.,
                                                                                          breast cancer cell
                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mueller H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MDA-MB-175.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               glycoprotein
                                                                                                                                                                                                                                                                                                                               Shoyab M.;
                                                                                                                                                                                                                                                                                                         factor that
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G
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                                                                                                                                     Ron
                                                                                                                  fusing
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REFERENCE DA A PRE REPRENCE DE LA PRESENTA DEL PRESENTA DEL PRESENTA DE LA PRESENTA DEL PRESENTA DE LA PRESENTA DEL PRESENTA DE LA PRESENTA D

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ISOId=Q15491-1; Sequence=External;

-!- TISSUE SPECIFICITY: Type I isoforms are the predominant forms expressed in the endocardium. Isoform alpha is expressed in breast, ovary, testis, prostate, heart, skeletal muscle, lung, placenta liver, kidney, salivary gland, small intestine and brain, but not in uterus, stomach, pancreas, and spleen. Isoform 3 is the predominant form in mesenchymal cells and in nonneuronal organs, whereas isoform 5 is the major neuronal form. Isoform 8 is expressed in spinal cord and brain. Isoform 9 is the major form in skeletal muscle cells; in the nervous system it is expressed in spinal cord and brain. Also detected in adult heart, placenta, laws, liver, kidney, and pancreas.
-!- DEVELOPMENTAL STAGE: Detectable at early embryonic ages.
-!- DOMAIN: The cytoplasmic domain may be involved in the content of trafficking and proferiments.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Liu X., Baker E., Eyre H.J., Sutherland G.R., Zhou M.;
"Gamma-heregulin: a fusion gene of DOC-4 and neuregulin-1 derived from a chromosome translocation.";
Oncogene 18:7110-7114(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRUCTURE BY NMR OF 175-241 (ISOFORM MEDLINE=94341264; PubMed=8062828;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oncogene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Solution structure of the epidermal growth heregulin-alpha, a ligand for pl80erbB-4."; EMBO J. 13:3517-3523(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nagata K., Kohda D., Hatanaka H.,
Yamamoto T., Suzuki A., Inagaki F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=20065180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lobuloalveolar budding and milk production in the mammary gland and inducing differentiation of mammary tumor cells; stimulating Schwann cell proliferation; implication in the development of the myocardium such as trabeculation of the developing heart.
SUBUNIT: The cytoplasmic domain interacts with the LIM domain region of LIMKI (By similarity).
SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active. The secreted isoform 9 has a signal peptide. The isoform 8 may be nuclear.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors, resulting in ligand-stimulated tyrosine phosphorylation and activation of the ERBB receptors. The multiple isoforms perfor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALTERNATIVE PRODUCTS:

Event=Alternative splicing; Named isoforms=9;

Comment=Additional isoforms seem to exist. Isoforms have been classified as type I NRGs (isoforms with an Ig domain and a glycosylation domain, isoforms 1-8), type II NRGs (isoforms with an Ig domain but no glycosylation domain, isoform 9) and type III NRGs (isoforms with a Cys-rich domain, isoform 10). All
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        these isoforms perform distinct tissue-specific functions,
Name=1; Synonyms=Alpha;
IsoId=202297-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         diverse functions such as inducing growth and differentiation of epithelial, glial, neuronal, and skeletal muscle cells; inducing expression of acetylcholine receptor in synaptic vessicles during the formation of the neuromuscular junction; stimulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IsoId=Q02297-4; Sequence=VSP_003432,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sme=3; Synonyms=Alpha2B;
IsoId=Q02297-3; Sequence=VSP_003434, VSP_003435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ime=2; Synonyms=Alpha1A;
IsoId=Q02297-2; Sequence=VSP_003431;
                                                                                                                                                                                                                                                                                                                                                                     IsoId=Q02297-9; Sequence=VSP_003425,
VSP_003430;
                                                                                                                                                                                                                                                                                                                                                                                                                     IsoId=Q02297-8; Sequence=VSP_003429, VSP_003430;
ime=9; Synonyms=GGF2, GGFHPP2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IsoId=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ime=6; Synonyms=Beta1, Beta1A;
IsoId=Q02297-6; Sequence=VSP_003428;
MAIN: The cytoplasmic domain may be involved in the trafficking and proteolytic processing. Regulation oteolytic processing involves initial intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                =Q02297-7; Sequence=VSP_003427;
Synonyms=Beta3, GGFHFBI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synonyms=Beta2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synonyms=Alpha3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=10597312; DOI=10.1038/sj.onc.1203136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Inagaki F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ichikawa S.,
                                                                                                                                                                                                                                                                                                                                                                                            VSP_003426,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VSP_003433;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor-like
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dimerization DOMAIN: ERBB

receptor binding (By similarity).

is elicited entirely by the EGF-like

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Best Local S
Matches 16
           SEQUENCE FROM N.A.

PubMed=12145742;

Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S., Stefansson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S., Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir B., Jonsson H., Ivarsson O., Chou T.T., Hjallason O., Birgisdottir B., Jonsson H., Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B., Gudnadottir V.G., Gudmundsdottir H., Harvey R.P., Brunner D., Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.
                                                                                                                                                                                                          Q7RTV8
Q7RTV8;
01-MAR-2004
01-MAR-2004
01-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s
                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                  Neuregulin 1
Name=NRG1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
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    Ingason A.,
Mutel V., G
                                                                                                                           NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send
                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activating ligand for the ERBB2-ERBB3 receptor complex and acts as an autocrine growth factor in a specific breast cancer cell line (MDA-MB-175). Not detected in breast carcinoma samples, including ductal, lobular, medullary, and mucinous histological types, neither in other breast cancer cell lines.

SIMILARITY: Belongs to the neuregulin family.

SIMILARITY: Contains 1 EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             external
form.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain
PTM: P:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fuses the 5'end of ODZ4 to NRG1 (isoform 8). The product of the translocation was first thought to be an alternatively spliced isoform, called gamma-heregulin. Gamma-heregulin is a soluble
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      similarity)
DISEASE: Ir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isoform, called gamma-heregulin. activating ligand for the ERBB2-F
                                                                                                                                                                                                                                                                                                                                                                                                                                            M94166
M94167;
M94168;
U02325;
U02327;
U02327;
U02328;
U023329;
                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M94165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          an
                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                    HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE
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                                                                                                                                                                                                                                                                                                                                                  HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proteolytic
                                                                                                                                                                                                          (TrEMBLrel. 26, 1
(TrEMBLrel. 26, 1
(TrEMBLrel. 26, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA58639.1;
AAA58639.1;
AAA58640.1;
AAA58641.1;
AAA19950.1;
AAA19951.1;
AAA19951.1;
AAA19953.1;
                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                     (Human)
                                                                                                                                                                                                isoform
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                                                                                                                                          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                    41.0%;
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ads to the release
                                                                                                                                                                                              HRG-alpha.
    Lemke
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                                                                                                                                                                                                           Last sequence update)
Last annotation update)
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Pred. No. 1.5e-05;
4; Mismatches 15;
                                                                                                                                          Craniata; Vo
Catarrhini;
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                                                                                                                                                     Vertebrata; Euteleostomi;
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                                                                                                                                           Hominidae;
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tent is in no
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Matches
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HSSP; Q12780; 1HRE.
GO; GO:0005102; F:receptor binding; II
GO; GO:0009790; P:embryonic developmer
InterPro; IPR000742; BGF_2:
InterPro; IPR006209; EGF_like.
InterPro; IPR007110; Ig-Tike.
                                   PRINTS, PRO1089; NEUREGULIN.
SMART; SM00101; EGF; 1.
PROSITE; PS00022; EGF 1; 1.
PROSITE; PS01186; EGF 2; 1.
PROSITE; PS00186; EGF 3; 1.
PROSITE; PS00589; PTS_HPR_SER
EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                                Q9ESA9;
Q9ESA9;
01-MAR-2001
01-MAR-2001
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PRINTS; P:
PROSITE;
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                                                                                                                                                                                                                       Carroll S.L., Anderson K.D., Submitted (OCT-1999) to the e-i-SIMILARITY: Contains 1 E EMBL; AF194440; AAG28429.1; HSSP; Q12780; 1HRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kong A., Gulcher J.R., Fernisson A., Schizophrenia.";
"Neuregulin I and Susceptibility to Schizophrenia.";
Am. J. Hum. Genet. 71:0-0(2002).

-i- MISCELLANEOUS: The sequence shown here is derived from the MISCELLANEOUS and third party annotation (TPA) entry.
 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                           SMDF neuregulin alpha 2b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002154; Neuregulin.
Pfam; PF00008; EGF; 1.
Pfam; PF00158; Neuregulin; 1.
Pfam; PF02158; Neuregulin; 1.
PRINTS; PR01009; NEUREGULIN.
            NON TER
                                                                                                                   Pfam; PF00008; EGF; 1.
Pfam; PF02158; Neuregulin; 1.
                                                                                                                                       GO; GO:0005102; F:receptor binding; IEA.
GO; GO:0009790; P:embryonic development;
InterPro; IPR000742; EGF 2.
InterPro; IPR006209; EGF-like.
InterPro; IPR002114; HPr SerP S.
InterPro; IPR002154; Neuregulin.
InterPro; IPR002154; Neuregulin.
                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                 STRAIN=BD
                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Andresson T.,
                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                             EQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ third party; BK000383; DAA00048.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PS00022;
PS01186;
PS50026;
                                                                                                                                                                                                                                                                                             FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS50835;
                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       640 AA;
 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
             298
                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gudbjartsson D., Manolescu A., Frigge
 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; EGF_1; 1.
; EGF_2; 1.
; EGF_3; 1.
; IG_LIKE; 1.
A; 70361 MW;
                                           EGF 1; 1.
EGF 2; 1.
EGF 3; 1.
EGF 3; 1.
PTS_HPR_SER; UNKNOWN_1.
             298
  32851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.0%;
                                                                                                                                                                                                                                               K.D., Frohnert P.W.;
o the EMBL/GenBank/DDBJ
ns 1 EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                       16,
26,
                                                                                                                                                                                                                                                                                                                                                                         (Fragment)
 , ww
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       development;
                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 113.5;
                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11AFC54B32527ACC CRC64;
  BD76F014C2B33026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No.
                                                                                                                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .5e-05;
les 15;
                                                                                                                                                                                                    IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                     AΑ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                       update)
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                                                                                                                                                                                                                                                             databases
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M.L.,
                                                                                                                                                                                                                                                                                                                                Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               640;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gurney M.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                               Rattus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP; Q12780; 1HRE.
GO; GO:0005102; F:receptor binding; IEA.
GO; GO:0009790; P:embryonic development; IE
InterPro; IPR000742; EGF 2.
InterPro; IPR006209; EGF like.
InterPro; IPR002114; HPr SerP S.
InterPro; IPR002154; Neuregulin.
                                                                                                                                                                                                                                                                                                                       NRG4 MOUSE
Q9WTX4;
16-OCT-2001
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2001
01-MAR-2001
01-MAR-2004
                                                                                                                                                                                                                                                16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Pro-neuregulin-4, short isoform (Pro-NRG4) (C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00022; EGF_1; 1.

PROSITE; PS01186; EGF_2; 1.

PROSITE; PS01026; EGF_3; 1.

PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.

EGF-11ke domain.

SEQUENCE 695 AA; 75646 MW; 5277F2CBA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00008; EGF; 1.
Pfam; PF02158; Neuregulin; 1.
PRINTS; PR01089; NEUREGULIN.
SMART; SM00181; EGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9ESBO;
                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                              Name=Nrg4;
Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SIMILARITY: Contains 1 |
EMBL; AF194439; AAG28428.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carroll S.L., Anderson K.D., Frohnert P.W.; Submitted (OCT-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Name=Nrg1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMDF neuregulin alpha 2a.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=BDIX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10116;
                                                                                                                                                                                                                         (NRG-4)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ch 40.3%; similarity 34.8%; 16; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCQPGFTGARCTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCQPGFTGARCTE
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(TremBLrel. 16, Last sequence up
(TremBLrel. 26, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40.3%; Score 111.5; DB 2
34.8%; Pred. No. 1.2e-05;
tive 13; Mismatches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 111.5;
Pred. No. 2.8e
13; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5277F2CBA2FB6878 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                        115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .8e-05;
les 16;
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                                                                                                                                                                                                                                                       [Contains: Neuregulin-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 695;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
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                                                                       Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
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"Neuregulin-4: a...
receptor tyrosine kinase.";
receptor tyrosine kinase.";
Oncogene 18:2681-2689(1999)
-!- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase,
resulting in ligand-stimulated tyrosine phosphorylation and
activation of the ERBB receptors. Does not bind to the ERBB1,
ERBB2 and ERBB3 receptors.
-!- SUNCELIULAR LOCATION: Exists as an type I membrane protein and a
a proteolytically released soluble growth factor form. The
a proteolytically released soluble growth factor form. The
                       DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                  between the Swiss Institute. There are the European Bioinformatics Institute. There are the European Bioinformatics Institute. There are the European Bioinformatics Institutions as long as its content is in the content is not removed. Usage by and for commercial arising a preement (See http://www.isb-sib.ch/announce/
                                                                              DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                          Multigene
                                                                                                                                                                       PROSITE; PS00022; EGF_1; 1.
PROSITE; PS01186; EGF_2; FALSE NEG.
PROSITE; PS50026; EGF_3; 1.
Alternative splicing; EGF-like domain;
                                                                                                                                                                                                                                                    InterPro; IPR001336; EGF_1.
InterPro; IPR000742; EGF_2.
InterPro; IPR006209; EGF_like.
InterPro; IPR006210; IEGF.
IPfam; PF00008; EGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright between the Swiss Institute of Bioi
                                                                                                                                    CHAIN
                                                                                                                                                                                                                             SMART;
                                                                                                                                                                                                                                       PRINTS;
                                                                                                                                                                                                                                                                                                                     EMBL; AF083067; AAD2187
HSSP; Q12780; 1HRE.
MGD; MGI:1933833; Nrg4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Harari D., Tzahar E., Romano J., Shelly M., Pierce J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=Liver;
MEDLINE=99276098; PubMed=10348342; DOI=10.1038/sj.onc.1202631;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similarity).
SIMILARITY: Belongs to
SIMILARITY: Contains 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          external face leads form (By similarity) PTM: Extensive glyco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALTERNATIVE PRODUCTS:
Event=Alternative splicing; Named
Comment=At least 3 isoforms may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=Q9WTX4-1; Se
TISSUE SPECIFICITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PTM: Proteolytic cleavage close to external face leads to the release
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN: ERBB receptor binding is elicited domain (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          proteolytic processing involves initial dimerization (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name=1
                                                                                                                                                                                                                  SM00181; EGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Extensive glycosylation precedes
                                                                                                                                                          family;
60
115 AA;
                          63
84
9
17
36
39
                                                                                                                                                                                                                                                                                                                                                   AAD21874.1;
                                                                                                                                                             Transmembrane.
                          115
62
63
115
23
34
45
12743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence=Displayed;
Y: Highly expressed in pancreas; weakly expressed
 MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the neuregulin EGF-like domain
           By similarity.
By similarity.
By similarity.
N-linked (GlCNAC...)
N-linked (GlCNAC...)
                                                                                                                                                                                                                                                                                                                                                                                                                                           yright It is produced through a collaboration of Bioinformatics and the EMBL outstation -
                                                                            Cytoplasmic EGF-like.
                                                                                                                  Neuregulin-4.
Extracellular (Potential)
                                                                                                                                            Pro-neuregulin-4,
                                                                                                       Internal signal
 989A1E376F857B49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   isoforms=1;
be produced;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the plasma membrane of the soluble growt
                                                                                                                                                                       Glycoprotein; Growth factor;
                                                                                            gnal sequence
(Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proteolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entirely
                                                                                                                                               membrane-bound
 CRC64;
             (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     brane on growth f
                                                                                                          (Potential)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cleavage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the
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RESULT
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RX Strausberg R.L., Peingold E.A., Grouse L.H., Derge J.G.,
RX Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RX Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RX Lischul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RX Hopkins R.F., Jordan H., Moore T., Max. S.I., Wang J., Hsieh F.,
RX Hopkins R.F., Jordan H., Moore T., Max. R., Rubin G.M., Hong L.,
RX Lischenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RX Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RX Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RX Rahas S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunarature P.H.,
RX RIChards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RX RIChards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RX RIChards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RX RICHARDS J., Worley R.C., Shevchenko Y., Bouffard G.G.,
RX RAHey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RX Halton E., Cythmood J.W., Green E. D., Dickson M.C.,
RX Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RX Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RX Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
"Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";

"Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";

"Legron RAT L. Acad. Sci. U.S.A. 99:16899-16903 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-2003
28-FEB-2003
05-JUL-2004
                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMAN
                                                                       between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NRG4 HUMAN
Q8WWG1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pro-neuregulin-4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Name=NRG4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fomo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NRG-4)
                                                                                                                                                                                                                                                                                                                                        FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors, resulting in ligand-stimulated tyrosine phosphorylation and activation of the ERBB receptors. Does not bind to the ERBB1, ERBB2 and ERBB3 receptors (By similarity).

SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).

DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
                                                                                                                                   SIMILARITY:
SIMILARITY:
                                                                                                                                                                                                                     PTM: Proteolytic cleavage close to the external face leads to the release of t form (By similarity).
                                                                                                                                                                                                                                                                                     DOMAIN: ERBB receptor binding is elicited entirely by the domain (By similarity).
                                                                                                                                                                                                                                                                                                                                dimerization (By similarity).
                      SWISS-PROT entry is copyright. It is produced through a collaboratic een the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19;
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                                                                                                                                                                                                 Extensive glycosylation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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                                                                                                                                   Belongs to
Contains 1
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41, Last sequence update)
44, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44, Last annotation update) short isoform (Pro-NRG4) [Contains:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39.7%;
                                                                                                                                the neuregulin EGF-like domair
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                 precedes the proteolytic cleavage
                                                                                                                                   domain.
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                                                                                                                                                                                                                                         growth
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45
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                                                                                        a collaboration
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                                                                                                                                                                                                                                           factor
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European

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RESULT 13
Q6PK61
ID Q6PK6
AC C6PK6
AC C
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                                                           RA Klausner R.L., Feingold E.A., Grouse L.H., Derge J.G.,

Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

RA Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RA Roha S.S., Mocley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RI Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

RA Pahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RA Whiting M., Madan A., W., Green E.D., Dickeon M.C.,

RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,

RA Rodriguez G. T. Marra M. A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
CARBOHYD
SEQUENCE
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05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
05-JUL-2004 (TrEMBLrel.
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DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota;
Mammalia; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Name=NRG1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuregulin 1, isoform HRG-beta3.
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PROSITE; PS001186; EGF_2; FALSE_NEG
PROSITE; PS50026; EGF_3; 1.
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                      Jones S.J., Marra M.A.;
"Generation and initial
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Ovary;
MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001336; EGF_1.
InterPro; IPR000742; EGF_2.
InterPro; IPR006209; EGF_like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; P01132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cransmembrane
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEEPCGPSHKSFCLNGGLCYVIPTIPS -- PFCRCVENYTGARCEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQ
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63
84
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
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                      initial analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Growth factor; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115
62
62
83
115
24
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34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39.4%;
42.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ME;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is not removed.
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By similarity.
By similarity.
N-linked (GloNAc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 109; DB Pred. No. 9.5e 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cytoplasmic EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Internal signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Neuregulin-4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pro-neuregulin-4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72F962E2D0F37AC3
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                        more
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                           than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .5e-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
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                           15,000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     λq
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                           full-length humar
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45
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RESULT OLD TO THE REVIEW OLD TO THE REVIEW OLD TO THE REVIEW OLD TO THE REVIEW OLD THE REVIEW OL
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Best Local Similarity
Matches 15; Conserv
InterPro; IPR000742; EGF 2.
InterPro; IPR006209; EGF like.
InterPro; IPR007110; Ig-Tike.
Pfam; PF000008; EGF; 1.
Pfam; PF00047; ig; 1.
PROSITE; PS00022; EGF 1; UNKNOWN 1.
PROSITE; PS50026; EGF 3; 1.
PROSITE; PS500835; IG LIKE; 1.
SEQUENCE 241 AA; 26142 MW; D2450D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000742; EGF 2.
InterPro; IPR006209; EGF like.
InterPro; IPR006210; IEGF.
InterPro; IPR003599; Ig.
InterPro; IPR003199; Ig-like.
InterPro; IPR003599; Ig_c2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q7RTWO PRELIMINARY; PRT; 241 AA.
Q7RTWO;
Q1-MAR-2004 (TrEMBLrel. 26, Created)
O1-MAR-2004 (TrEMBLrel. 26, Last sequence update)
O1-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Neuregulin 1 isoform GGF (Neuregulin 1 isoform hrg-beta3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART;
                                                                                                                                                                                                                                                                                           Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S., Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S., Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H., Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B., Ingsason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D., Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G., Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M. Kong A., Gulcher J.R., Petursson H., Stefansson K.; "Neuregulin I and Susceptibility to Schizophrenia."; Nauregulin I and Susceptibility to Schizophrenia."; Am. J. Hum. Genet. 7:10-0(2002).

-I- MISCELLANEOUS: The sequence shown here is derived from an EMBL/GenBank/DDBJ third party annotation (TPA) entry.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                      EMBL; BK000383; DAA00046.1; HSSP; Q12780; 1HRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE;
EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00181; EGF; 1.

SMART; SM00409; IG; 1.

SMART; SM00408; IGC2; 1.

PROSITE; PS00022; EGF 1; UNKNOWN 1.

PROSITE; PS50026; EGF-3; 1.

PROSITE; PS50835; IG_LIKE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=12145742;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00008; EGF; 1
Pfam; PF00047; ig; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BC006492; AAH06492.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Natl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (APR-2001) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AA; 26114 MW; FE8B9FDF71B816B1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Acad.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 104.5; DB 2;
Pred. No. 7.2e-05;
L4; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99:16899-16903 (2002) .
     D2450DB340E6B64D CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Gurney M.E.,
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RESULT OLD A CONTROL OF A CONTROL OLD A CONT
Search completed: May
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Best Local S
Matches 15
                                                                                                                                                                                                               Query Match
Best Local &
                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                             Pfam; PF00008; EGF; 1.
Pfam; PF000047; ig; 1.
SMART; SM00181; EGF; 1.
SMART; SM00181; EGF; 1.
SMSTE; SM00408; IGC2; 1.
PROSITE; PS01022; EGF 1; UNKNOWN 1.
PROSITE; PS01186; EGF 2; FALSE NEG.
PROSITE; PS50186; EGF 3; 1.
PROSITE; PS50835; IG LIKE; 1.
EGF-like domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JAN-1998
01-JAN-1998
01-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-93205115; PubMed-8096067; DOI=10.1038/362312a0; MEDLINE-93205115; PubMed-8096067; DOI=10.1038/362312a0; Marchionni M.A., Goodearl A.D.G., Chen M., Bermingham-McD. Kirk C., Hendricks M., Danehy F., Misumi D., Sudhalter J. Kobayashi K., Wroblewski D., Lynch C., Baldasarre M., Hill Cobayashi K., Wroblewski D., Lynch C., Maldasarre M., Hill Davis J.B., Hsuan J., Totty N.F., Otsu M., McBurney R.N., Waterfield M.D., Stroobant P., Gwynne D.; "Glial growth factors are alternatively spliced erbB2 lights."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; L12259; AAA3UDT
PIR; S32359; S32359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Glial growth ractor.
Name=GGFBPP5; Synonyms=neuregulin;
Bos taurus (Bovine).
Boutaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q07112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 362:312-318(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    expressed in the nervous system.";
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NCBI_TaxID=9913;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000742;
InterPro; IPR006209;
InterPro; IPR006210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SIMILARITY: Contains 1 EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            interPro; IPR003598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR007110;
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                                                                                              178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q12780; 1HRE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L12259; AAA30540.1;
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                                                                                                                                                                                          Similarity
                                                                                                                                          HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
                                                                                            HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEKPCRDKDLAYCLNDGECEVIETLTGSHKH-CRCKEGYQGVRCDQFL
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8 (TrEMBLrel. 05,
4 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                         241 AA;
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                    4,
                                                                                                                                                                                                                                                                                         25955 MW; BF571297E8DA9796 CRC64;
                                                                                                                                                                                                               37.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGF_2.
EGF_like.
IEGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ig-like.
Ig_c2.
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                       2005,
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                       12:07:05
                                                                                                                                                                                          Score 104.5; I
Pred. No. 7.2e
14; Mismatches
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Pred. No. 7.2e-05
4; Mismatches 1
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nes 18;
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                                                                                                                                                                                                                                        Length 241;
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Result
No.
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
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Perfect score:
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 22222211111111
22222211111111
2322221111111
23222211111
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23221
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                                                                                                    277
113.5
113.5
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277
1 HFKPCRDKDLAYCL
                                                                                                                                                                                                                                                                                                                                                                   pIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                  Query
Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
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30.00.55
30.00.55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Copyright
                                                                                                                                                                                                                                                                                  Length
GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd
                                                                                                                                                                                                                                                                                   DB
         JC5702
JC5701
EGVZSF
A56136
JT0747
S68401
A48825
A46019
A37408
                                                                                                                      A56943
S32357
C43273
B43273
B43273
A56210
I61718
I61718
                                                                                                                                                                                      S62676
I38408
D43273
S32359
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                                                                                                                    heregulin precurso glial growth facto sensory/motor neur glial growth facto heregulin precurso heregulin, splice neu differentiatio neu differentiatio neu differentiatio
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hypothetical prote
ErbB kinase activa
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neu differentiatio
neu differentiatio
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### ALIGNMENTS

QGVRCDQ 45	atch 41.0%; Score 113.5; DB 2; Length 125; cal Similarity 34.8%; Pred. No. 5.9e-06;	A;Accession: 138405 A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: mRNA A;Residues: 1-125 <res> A;Cross-references: EMBL:U02327; NID:g408404; PIDN:AAA19952.1; PID:g408405 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology</res>	C;Accession: 138405 R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.; Mol. Cell. Biol. 14, 1909-1919, 1994 A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fac A;Reference number: A56210; MUID:94158863; PMID:7509448	RESULT 2  138405  neu differentiation factor - human (fragment)  C;Species: Homo sapiens (man)  C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002	Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKBGYQGVRCDQFL 47	Query Match 100.0%; Score 277; DB 2; Length 713; Best Local Similarity 100.0%; Pred. No. 6.9e-24; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: mRNA A;Molecule type: mRNA A;Esidues: 1-713 <zha> A;Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24 C;Genetics: A;Gene: NRG3 C;Superfamily: mouse neuregulin-3</zha>	C;Accession: 14444/ R;Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Crov Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997 A;Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and activ A;Reference number: Z22773; MUID:97420720; PMID:9275162	RESULT 1  144447  144447  16

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A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology; i
C;Keywords: alternative splicing; glycoprotein
F;182-221/Domain: EGF homology <EGF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Experimental source: breast tumor cell line, MDA-MB-231, ATCC HTB 26 A;Note: sequence extracted from NCBI backbone (NCBIP:103250) R;Culcuscou, J.M.; Plowman, G.D.; Carlton, G.W.; Green, J.M.; Shoyab, M. J. Biol. Chem. 268, 18407-18410, 1993 A;Title: Characterization of a breast cancer cell differentiation factor that A;Reference number: A48498; MUID:93366731; PMID:7689552
                                                                                                                                                                                                                                                                              A;Cross-references: GDB:132656; OMIM:142445
                                                                                                                                                                                                                                                                                                               A; Gene: GDB: HGL
                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein
A; Residues: 'X', 15-16,'X', 18-20,'RG', 23-24,'GP', 27,'E', 29,'XP', 32-36 <PEL>
A; Note: sequence extracted from NCBI backbone (NCBIP:91347)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 20-21,'x',33-24,'XX',27-28 <CUL>
R;Reles, E.; Bacus, S.S.; Koski, R.A.; Lu, H.S.; Wen, D.; Ogden, S.G.; Levy, R.B.; Yarde Cell 69, 205-216, 1992
A;Title: Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein that induce A;Reference number: A38155; MUID:92208945; PMID:1348215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A,Title: Identification of heregulin, a specific activator of p185(erbB2)
A,Reference number: A43273; MUID:92271253; PMID:1350381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Holmes, W.E.; SIIWKOWSKI,
Science 256, 1205-1210, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        heregulin precursor, splice form alpha - human N, Alternate names: breast cancer cell differentiation factor p45; Neu differentiation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Homo sapi
C;Date: 29-May-1998
C;Accession: I38404
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: nucleic acid sequence not shown; not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: A43273
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Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;Species: Homo sapiens (man)
;Species: Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002;Date: A3273; A48498; A38155;Accession: A43273; A48498; A38155;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park,
                                                  Matches
                                                                                                        Query Match
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                                                  16;
                                                                                   Similarity
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HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
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34.8%; Pred. No. 1.8e-05;
34.8%; Mismatches 15;
                                               14;
                                                                             Score 113.5; DB 2
Pred. No. 2.4e-05;
                                                     Mismatches
                                                                                                                                                                                                                            immunoglobulin homology
                                                     15;
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                                                                                                        Length
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                                                           R;Hara, S.; Liu, N.; Nicus, C.C., 75, 1996
Biochim. Biophys. Acta 1292, 168-176, 1996
A;Title: Isolation and structural characterization of recombinant human neu differentiati
                                                                                                                                                                                     C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change C;Accession: $62676
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                          A;Status:
                                                  A; Reference number: S62676; A; Accession: S62676
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type: protein

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08-Sep-2002

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                                          223
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 29-May-1998 #sequence revision 29-May-1998 #text change 09-Jul-2004
C;Accession: I61719; I61723; T61716; I61717; I61724; A38720
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional assects of the multiplicity of Neu differentiation face
A;Reference number: A56210; MULD:94158863; PMID:7509448
A;Accession: I61719
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161719
                                                  RESULT
S62676
                                                                                                                                                                                                                                                                                                                                                                            A; Note: sequence extracted from C; Superfamily: human heregulin;
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A;Residues: 1-422,'H','NL',637-638,'ELRRNKAYRSKCMQIQLSATHLRPSSITHLGFIL' <RI
A;Cross-references: EMBL:U02317; NID:g408384; PIDN:AAA19942.1; PID:g408385
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A;Residues: 1-422,'H','NL',637-638,'ELRRNKAYRSKCMQIQLSATHLRPSSITHLGFIL'
A;Cross-references: EMBL:U02316; NID:g408382; PIDN:AAA19941.1; PID:g408
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A; Residues: 1-639 < RES>
heregulin isoform alpha 2 - human N; Alternate names: differentiation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:U02324; NID:g408398; PIDN:AAA19949.1; R;Wen, D.; Peles, E.; Cupples, R.; Suggs, S.V.; Bacus, S.S.; Lu
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A;Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                Local
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                                                                                                                                                                                                                                                                    40.3%; Score 111.5; DB 34.8%; Pred. No. 4e-05; tive 13; Mismatches
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                            (fragments)
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Luo, Y.; Trail,
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A;Residues: 1-6;7-16;17-30;31-38;39-58;59-92;93-120;121-125 <HAR> C;Superfamily: human heregulin; EGF homology; immunoglobulin homology C;Keywords: proto-oncogene

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R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Par Science 256, 1205-1210, 1992

A;Title: Identification of heregulin, a specific activator of p185(erbB2)

A;Reference number: A43273; MUID:92271253; PMID:1350381

A;Accession: D43273
                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: UNIPROT:Q02297

R;Marchionni, M.A.; Goodeari, A.D.J.; Chen, M.S.; Bermingham-McDonogh, O.;
Les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.;
Nature 362, 312-318, 1993

A;Title: Glial growth factors are alternatively spliced erbB2 ligands expr
A;Reference number: S23357; MUID:93205115; PMID:8096067

A;Accession: S32358
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A;Title: Structural and functional aspects of the multiplicity of Neu differentiation A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38408
    A;Cross-references: GDB:132656; OMIM:142445
A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology;
C;Keywords: alternative splicing
F;182-221/Domain: EGF homology <EGF>
                                                                                                                                                                                                             A;Cross-references: GB:L12261; NID:g292049; C;Genetics: A;Gene: GDB:HGL; GGF
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C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: D43773; S2358
C;Accession: D43773; S2358
R;Holmes, W.B.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park,
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A; Residues: 1-241 < MAR>
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A; Residues: 1-241 < HOL>
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heregulin precursor ---
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C;Accession: I38408
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;Superfamily: human heregulin; EGF homology;
;116-155/Domain: EGF homology <EGF>
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Species: Homo sapiens (man)
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alternative splicing omain: EGF homology <
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; Pred. No. 8.3e-05;
14; Mismatches 18
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Pred. No. 4.8e-05;
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                                                                                    immunoglobulin
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                                                                                    homology
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C; Accession: S32357
C; Accession: S32357
R; Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.;
R; Marchionni, M.B.; Hsuan, J.J.; Totty, N.F.; Ot

Bermingham-McDonogh, O. tsu, M.; McBurney, R.N.;

O.; Kirk, C.; N.; Waterfield,

Davis, J.B.; Hsuan, 62, 312-318, 1993

C;Species: Homo sapiens (man)
C;Date: 02-Dec\_1993 #sequence\_revision 10-Nov-1995 #text\_change 08-Sep-2002

glial growth

factor - human

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C;Superfamily: பயமை பட்டு———. F;237-276/Domain: EGF homology <EGF>
                                                                                                                                                                                                                                                                                                                          A;Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expres A;Reference number: A56943; MUID:95301541; PMID:7782315 A;Accession: A56943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R. Nature 362, 312-318, 1993
A;Title: Glial growth factors are alternatively spliced erbB2 ligands A;Reference number: S32357; MUID:93205115; PMID:8096067
A;Accession: S32359
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C;Superfamily: human heregulin; EGF
F;182-221/Domain: EGF homology <EGF>
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                                                                                                                                                                                                      A;Cross-references: UNIPROT:Q15491; GB:L41827; NID:g862422; PIDN:AAC41764.1; PID:g862423 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                           R;Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Osheroff, J. Biol. Chem. 270, 14523-14532, 1995
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                                                                                                                                                                                                                                                                                               A; Status: preliminary; not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sensory/motor neuron-derived factor -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Species: Homo sapiens (man)
Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Accession: A56943
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                                                                                         Matches
                                                                                                                                  Query Match
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15; Conserv
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                                                                                       37.7%; Score 104.5; DB 2
31.2%; Pred. No. 0.00013;
ative 14; Mismatches 18
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                                                                                                                                     DB 2;
                                                                                                                                     Length 296;
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R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.N. Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38407
                                                                                                                                                                                                                                                     heregulin, splice form beta 1 - human (;Species: Homo sapiens (man) (pspecies: Locally 1993 #sequence (pspecies: Locally 1993 #s
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A;Acession: C43273
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A; Molecule type: mRNA
A; Residues: 1-645 < HO
                                                                                                        Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator A;Reference number: A43273, MUID:92271253; PMID:1350381
A;Accession: B43273
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C;Keywords: alternative splicing
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A; Residues: 119-406 < RES>
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Science 256, 1205-1210, 1992
A;Title: Identification of h
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                                                                            A;Status: preliminary; nucleic
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Best Local Similarity
Matches 15; Conserv
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les 15; Conserv
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                                                                                                                                                                                     C;Species: Rattus norvegicus (Norway rat)
C;Date: 29-May-1998 #sequence revision 29-May-1998 #text_change 09-Jul-2004
C;Date: 29-May-1998 #sequence revision 29-May-1998 #text_change 09-Jul-2004
C;Accession: I61718; I61721 T61720
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation A;Reference number: A56210; MUID:9415863; PMID:7509448
A;Accession: I61718
A;Accession: I61718
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-636 <RES>
A;Residues: 1-636 <RES>
A;Cross-references: UNIPROT:P43322; EMBL:U02318; NID:9408386; PIDN:AAA19943.1; PID:940
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    A;Molecule type: mRNA
A;Residues: 1-444,'A',446-636 <RE2>
A;Cross-references: EMBL;U02321; NID:g408392; PIDN:AAA19946.1;
                                                                                                                    A;Accession: I61721
A;Status: preliminary; translated from GB/EMBL/DDBJ
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PID:g408393

PID:g4083

A.M.;

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R; Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L. Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: A56210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L. Mol. Cell. Biol. 14, 1909-1919, 1934
A;Title: Structural and functional aspects of the multiplicity A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38406
                                                                                                                                                                                                                                                                                                                                                                                                                      neu differentiation factor - rat (fragment) C; Species: Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology;
C;Keywords: alternative splicing
                                                                                                                                                                                                                                                                                                                                                                              C;Date: 02-Jul-1996 #sequence_revision C;Accession: A56210
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A; Residues: 'A', 95-418, 'F', 420-645
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                                                                                                                                                                A;Cross-references: EMBL:U02315; NID:g408380; PIDN:AAA19940.1; C;Superfamily: human heregulin; EGF homology; immunoglobulin hc
                                                                                                                                                                                                              A; Residues: 1-230 < RES>
                                                                                                                                                                                                                             A;Status: preliminary; translated A;Molecule type: mRNA
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                                                                                 37.0%; Score 102.5; DB 2; 31.2%; Pred. No. 0.00018; tive 13; Mismatches 19;
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A;Accession: I61720
A;Status: preliminary; translated from GB/EMBL/DDBJ
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Job time: 40 secs
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GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.

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Result
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Maximum DB
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seq length: 2000000000
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| Cgn2 6/ptodata/1/pubpaa/US07 PUBCOMB.pep:*
| Cgn2 6/ptodata/1/pubpaa/US06 NEW PUB.pep:*
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_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
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US-10-116-573A-8
US-10-215-862-4
US-10-215-862-8
US-10-944-116-8
US-10-240-411-6
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41.0	41.0	41.0	41.0	41.0	41.0	41.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
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US-10-609-370-17	US-10-096-241-12	US-10-944-116-14	US-10-215-862-14	US-10-136-573A-14	US-09-877-665-14	US-09-817-647-14	US-10-944-116-6	US-10-609-370-22	US-10-215-862-6	US-10-136-573A-6	US-09-877-665-6	US-09-817-647-6	US-10-944-116-2	US-10-215-862-2	US-10-136-573A-2	US-09-877-665-2	US-09-817-647-2	US-10-944-116-23	US-10-215-862-23	US-10-136-573A-23	US-09-877-665-23	US-09-817-647-23	US-10-944-116-3	US-10-215-862-3	US-10-136-573A-3	US-09-877-665-3	US-09-817-647-3	US-10-944-116-7	US-10-215-862-7	US-10-136-573A-7	US-09-877-665-7
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# ALIGNMENTS

RESULT 1 US-09-817-647-4

Sequence 4, Application US/09817647
Patent No. US20020082229A1
GENERAL INFORMATION:

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APPLICANT: Golowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS: ADDRESSE: Genentech, Inc. STREET: 1 DNA Way

CITY: South San Francisco STATE: California COUNTRY: USA ZIP: 94080

COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: (COMPUTER: USA)

CURRENT APPLICATION NUMBER: US/9/817,647

FILING DATE: 26-Mar-2001

PRIOR APPLICATION NUMBER: US/9/817,647

FILING DATE: CHARDOWN

APPLICATION NUMBER: 09/107,979

FILING DATE: CHARDOWN

APPLICATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: 91004R1-2

TELECOMMUNICATION INFORMATION:
TORNATION FOR SEQ ID NO: 4:
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Query Match
Best Local Similarity
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                                                                                                            US-09-817-647-8
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                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:

APPLICATION NUMBER: U$/09/817,647
FILING DATE: 26-Mar-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION NUMBER: 09/107,979
APPLICATION NUMBER: 09/107,979
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: COnley. Delidre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: 91084R1-2
TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
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OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO:
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LENGTH: 47 amino aci
TYPE: Amino Acid
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ADDRESSEE: Genentech, Inc.
STREET: 1 DNA WAY
CITY: South San Francisco
                                                                                                                                SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
                                                                                                                                                                                             NAME/KEY:
LOCATION:
                                                                                                                                                  IDENTIFICATION METHOD: OTHER INFORMATION:
                                                                                                                                                                                                                                                           TYPE: Amino Acid
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: California
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                                                                                                                                                                                                                                                                                                 LENGTH: 47 amino acids
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                        ilarity 100.0%;
Conservative
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                                                                                                                                                                                                                                                                                                                                                                                       650/225-2066
                                        100.0%; Score 277; DB 9; 100.0%; Pred. No. 4.3e-26;
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                        Mismatches
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                                                              DB 9; Length 47;
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RESULT 4
US-09-877-665-8
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                                                                              Sequence 8, Application US/09877665
Patent No. US20020164680A1
PATENT INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09877665 Patent No. US20020164680A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                     Matches
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SEQUENCE CHARACTERISTICS:
SENCTH: 47 amino acids
TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
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FILING DATE: 30-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Delidire L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-1
                 NUMBER OF SEQUENCES: 23 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
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TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin
Ligands and Uses Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE DESCRIPTION: SEQ ID NO: 4:
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                                                                                                                                                                                                                                                                                                                                                                     47;
                                                                                                                                                                                                                                                                                MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WinPatin (Genentech)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: NRG3 EGF-like domain/amino acid seq. LOCATION: 1-47
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ADDRESSEE: Genentech, Inc
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TELEFAX: 650/952-9881
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                                                            Ligands and Uses Therefor
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STATE: California

94080

: South San

Francisco

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Sequence 4, Application US/10136573A

Publication No. US20020161200A1

Publication No. US20020161200A1

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J.

APPLICANT: Godowski, Paul J.

APPLICANT: Chang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and

TITLE OF INVENTION: Uses Therefor

FILE REFERENCE: p1084R1C2

CURRENT APPLICATION NUMBER: US/10/136,573A

CURRENT FILING DATE: 2002-04-29

PRIOR APPLICATION NUMBER: US 09/480,977

PRIOR APPLICATION NUMBER: US 08/699,437

PRIOR APPLICATION NUMBER: US 60/052,019

PRIOR PILING DATE: 1997-07-09

NUMBER OF SRO IN NOC. 27
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                                                      US-10-136-573A-4
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  Query Match
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                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 23
                                                                                                             TYPE: PRT
                                                                            ORGANISM: Homo sapiens
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SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
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APPLICATION NUMBER: US/09/109,206

FILING DATE: 30-Jun-1998

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REGISTRATION NUMBER: P1084R1-1

TELEPRONE: 650/225-2666

TTELEPHONE: 650/225-2666
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APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
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"MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
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  100.0%;
  Score 277;
  DB 13;
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Length 47;
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; LENGTH: 47
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-215-862-4
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                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/215,862
CURRENT FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR FILING DATE: 1998-07-30
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 66/052,019
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US-10-136-573A-8
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Best Local Similarity 100.0%; Score 277; Matches 47; Conservative
                                                                                                                                                                                                       SEQ ID NO 4
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Publication No. US20030036166A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
TITLE OF INVENTION: Uses Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: P1084R1D2C1
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                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS:
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                 Mismatches
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                                     4.3e-26;
                                                                DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 13;
                                                           Length 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 47;
              Indels
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              Gaps
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US-10-944-116-4
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; ORGANISM: Homo sapiens
US-10-215-862-8
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US-10-215-862-8
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SEQ ID NO 8
LENGTH: 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/10944116 Publication No. US20050048622A1 GENERAL INFORMATION:
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: BrbB Receptor-Specific Neuregulin Related Ligands and TITLE OF INVENTION: Uses Therefor FILE REFERENCE: P1084811DC1
CURRENT APPLICATION NUMBER: US/10/215,862
CURRENT FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR PILING DATE: 1998-07-30
PRIOR FILING DATE: 1998-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Godowski, Paul J.
                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Godowski, Paul J.
Mark, Melanie Rose
Zhang, Dong Xiao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47;
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                            APPLICATION NUMBER: 09/877665
FILING DATE: 08-JUN-2001
APPLICATION NUMBER: 09/109206
FILING DATE: 30-JUN-1998
                                                                                                                                           APPLICATION NUMBER: US/10/944,116 FILING DATE: 17-Sep-2004 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                 STATE: California
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       APPLICATION NUMBER: 60/052019
                                                                                                                                                                                                                                                                                                                                                           ZIP: 94080
                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
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                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
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Best Local Similarity
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                               INFORMATION FOR
                                                                                                                                                                                APPLICATION NUMBER: 09/877665
FILING DATE: 08-JUN-2001
APPLICATION NUMBER: 09/109206
FILING DATE: 30-JUN-1998
APPLICATION NUMBER: 60/052019
FILING DATE: 09-JUL-1997
ATTORNEY/ACENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REGERENCE,DOCKET NUMBER: P108
TELECOMMUNICATION INFORMATION:
TELEPAN: 650/225-2066
TELEPAX: 650/952-9881
**ORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                               SOPTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/944,116
FILING DATE: 17-Sep-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: California
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P1084R1-1C2

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Sequence 8, Application US/10944116 Publication No. US20050048622A1
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SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
NAME: COALEY, Deirdre L.
REGISTRATION NUMBER: 36,487
                                                                                                                                                                                                                                                                     TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Godowski, Paul J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE DESCRIPTION: SEQ ID NO: 4:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
                                                                                                                                                         CITY: South San Francisco
                                                                                                                                                                                                   ADDRESSEE: Genentech, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: 1-47
IDENTIFICATION METHOD:
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ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                      Mark, Melanie Rose
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                                                                                                                                                                                                                                                                                                                 Dong Xiao
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Pred. No. 4.3e-26;
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US-10-240-411-6
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US-10-240-411-6
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; ORGANISM: Homo sapiens
US-10-609-370-2
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                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Young et al.
TITLE OF INVENTION: Heregulin-Like Factor
FILE REFERENCE: PF383D1
                                                      SOFTWARE: PatentIn version 3.2
SEQ ID NO 2
LENGTH: 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 20
SOFTWARE: PatentIn version 3.0
SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/10609370 Publication No. US20040048295A1
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Best Local (
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Publication No. US20040121326A1
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                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/609,370
CURRENT FILING DATE: 2003-07-01
PRIOR APPLICATION NUMBER: 09/097,681
PRIOR FILING DATE: 1998-06-16
PRIOR APPLICATION NUMBER: 60/049,942
PRIOR APPLICATION NUMBER: 60/049,942
PRIOR FILING DATE: 1997-06-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Yarden, Yosef
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE
TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF
FILE REFERENCE: 01/21918
CURRENT APPLICATION NUMBER: US/10/240,411
CURRENT FILING DATE: 2003-05-16
PRIOR APPLICATION NUMBER: US 09/553,769
PRIOR FILING DATE: 2000-04-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Harari, Daniel APPLICANT: Yarden, Yosef
                                                                                                                       NUMBER OF SEQ ID NOS: 22
                                       TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
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Local Similarity 100.0%; 1
les 47; Conservative 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 47 amino TYPE: Amino Acid
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Pred. No. 4.3e-26;
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                                                                                                      US-09-877-665-7
                                                                                                                           RESULT 14
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Sequence 7, Application US/09877665

Patent No. US20020164680A1

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 7, Application US/09817647
Patent No. US2002008229A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong
TITLE OF INVENTION: ErbB Receptor-specific Neuregulin Related
Ligands and Uses Therefor
                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 650/952-9881 INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/817,647
FILING DATE: 26-Mar-2001
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                   286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77
                                                                                                                                                                                                          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WinPatin (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 09/107,979 FILING DATE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: South San F
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                       IDENTIFICATION METHOD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Genentech, Inc.
                                                                                                                                                                                                                                                                 Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                hNRG3 extracellular domain/Amino AcidSeq
1-360
                                                                                                                                                                                                                                                                                  100.0%; Score 277; DB 9; 100.0%; Pred. No. 3.3e-25;
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Pred. No. 1.4e-25;
                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                     7:
                                                                                                                                                                                                                                                                                                    Length 360;
                                                                                                                                                                                                                                                                   Indels
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                         Xiao
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Genente

Genentech, Inc

TREET: 1 DNA Way

STATE: California

Ligands and Uses Therefor NUMBER OF SEQUENCES: 23

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Sequence 7, Application US/10136573A

Publication No. US20020161200A1

GENERAL INFORMATION:
APPLICANT: Mark, Melanie Rose
APPLICANT: Mark, Melanie Rose
APPLICANT: Mark, Melanie Rose
APPLICANT: Mark, Melanie Rose
ITILE OF INVENTION: Uses Therefor
FILE OF INVENTION: Uses Therefor
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
CURRENT FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR FILING DATE: 1997-07-09
PRIOR FILING DATE: 1997-07-09
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US-10-136-573A-7
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SEQ ID NO 7
LENGTH: 360
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:

APPLICATION DATA:

APPLICATION UNMBER: US/09/109,206

FILING DATE: 30-Uni-1998

ATTORNAY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REGISTRATION NUMBER: P1084R1-1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEPHONE: 650/225-2066
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OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 7:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

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FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 360 amino acids TYPE: Amino Acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94080
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; ORGANISM: Homo sapiens US-10-136-573A-7
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Query Match 100.0%; Score 277; DB 13; Length 360; Best Local Similarity 100.0%; Pred. No. 3.3e-25; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps Matches 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47

0

Db 286 HFKPCKDKDLÁYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDQFL 332

Search completed: May 4, 2005, 12:20:04 Job time: 134 secs